

change and innovation in elementary school organization

selected readings

Maurie Hillson

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CHANGE
AND INNOVATION
IN ELEMENTARY SCHOOL
ORGANIZATION

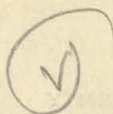
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Preface

SLIGHTLY OVER A HUNDRED YEARS AGO the *graded* elementary school came into being. This innovation was looked upon as the organizational framework for education. Goodlad and Anderson¹ observe that "when the Quincy Grammar School opened its doors to pupils in 1842, certain enthusiastic citizens predicted that its new organization would set the pattern for fifty years to come." This prediction was actually somewhat modest in comparison to the claims being made for the various present-day innovations.

In the decade of the 1950s, some stirrings in American education were observed. This activity was concerned with changing the traditional graded educational organization of the elementary school. In the 1960s intensive activities and experimentation have been challenging

¹ *The Nongraded Elementary School* (New York: Harcourt, Brace & World, Inc., 1963, Rev. Ed.), p. 44.

the concept and organization of the graded school and its attendant creation, the self-contained classroom.

Of course, many proposed innovations have their well-springs in the past. The astute educational historian would experience little difficulty in relating the educational movements of today to their forebears. If direct ancestral lines cannot be established we can intelligently assume that the present educational plans for reorganizing the elementary school in America did not appear at once full-blown, polished, and immediately operable.

Just as various historical happenings joined in 1842 to bring about the graded Quincy Grammar School, early counter-active movements, sometimes timid or abortive, led to what in this decade is now a series of movements aimed at the reorganization of the elementary school.

This book of selected readings limits its scope concerning these reorganization movements. The selections or articles are germane to the most popular suggestions or activities for elementary school reorganization. In order to gain a sense of perspective, however, a brief recounting of some history attendant to innovation and change may be valuable.

There have been other periods during which intense activities aimed at altering, modifying, or, indeed, eliminating traditional educational organizations took place. One could start well before the middle 1800s when the graded school began and almost trace some lines of thought that are very compatible or at least congruous with some of the readings in this book. For example, from Rousseau one could trace influences which led to Pestalozzi's industrial school at Neuhof, his work at Stanz with a strong program of observational method, his institute at Burgdorf and on through to his institute at Yverdon, and thence, to the movement for reform in America as realized through Horace Mann and Sheldon at Oswego. Both Froebel and Herbart were contemporary disciples of Pestalozzi. To sense the intertwining of movements one need only note the similarity of Herbart's call for "concentration" on "cultural epochs" to create a "many-sided interest" and the present-day "dual progress plan" with its

call for "cultural imperatives" and "cultural electives" to create much the same kind of interest. Indeed, the enormous influence of Froebel and Herbart produced movements that still are felt on the modern educational scene.

The selections in this book that deal with change and innovation are primarily of recent vintage. It would be wise to note, albeit briefly, that other concentrated attacks against the traditional organization of the elementary school took place in the 1920s and 1930s. Early in the 1920s Dewey's synthesis of pragmatism and instrumentalism bore fruit in the progressive movement. In the early 1930s George Counts called for progressive reform with a militancy that frightened a depression-ridden society. But the progressive idea was so alive, so vital, and so continuously evolutionary that from it sprung both the concept of drastic societal reform and education aimed at individual adjustment to an "edgy" society. Because of this movement the organization for learning in the elementary school changed. Individual differences were met through inter- and intraclass grouping, individual contracts were made by pupil and teacher, and various schema were employed as attempts to work within the traditional elementary school organization. At the same time Dewey was developing his methods in an experimental school at the University of Chicago, the first woman to receive a doctorate in medicine in Rome was declaring a new "liberty of the pupil." Instead of holding children to fixed prepackaged standards or exercises such as grades would do, she affirmed that "autoeducation" was the only education worth having. The impact of the thinking of Maria Montessori is just being felt in this country. Her methods, much modified by the use of the vast resources of scientific growth, represent but another experimental plan in the progression of educational growth and change.

Throughout the history of American education, landmarks of organizational change are evident. Attempts at quarter- and half-term promotion, acceleration, the Dalton, Winnetka, and Batavia plans, and the Quincy coaching plan, which was set up immediately after the graded plan was adopted so that youngsters

who were less able could keep up and in step with the grades that had been created, were but a few movements to change or at least modify the traditional elementary school organization. At Batavia, for example, a plan was developed wherein two teachers per class were used, a team of teachers if you prefer; one taught the group at grade level, the other worked at trying to keep those who had fallen behind up to grade level.

Many of these plans are alluded to in the several readings that make up this collection. One selection in particular lists and describes many of the most well-known reorganizational arrangements. Suffice it to say that there are many lessons to be learned from the history of school organizational innovation and change and the reader would be well repaid the time and effort expended by delving more deeply into the substance of the educational story.

Harold G. Shane² lists thirty-five plans of grouping, which over the years have been "created and either discarded, modified, or gradually made a part of common practice." He points out that his list is not exhaustive and indeed, not even comprehensive. However, the fact that such a list exists makes it obvious that the shortcomings of the traditional elementary school, with all of the attendant features relating to pupil progress, grouping, segmentation and fragmentation, and a myriad of other equally unrealistic aspects, have been known by many educators. Some of these educators attempted to alter the organization by the creation of some of the plans alluded to on the Shane list, as well as through many other types of grouping never reported in the educational literature.

It is a formidable task to set up a collection of readings dealing exclusively with the reorganization of the elementary school because of two factors. First, the literature in this area is now quite vast. For example, *The Elementary School Journal* alone, in the area of the "nongraded school," had articles ap-

² "The School and Individual Differences," *Sixty-first Yearbook of the National Society for the Study of Education, Part I* (Chicago: University of Chicago Press, 1962), p. 49.

pearing in Numbers 1, 2, 3, 4, 5, and 8 of Volume 61; Numbers 2, 4, and 5 of Volume 62; and Numbers 1 and 4 of Volume 63, the last article mentioned being one by the senior editor of this collection. Other types of elementary school reorganization plans are reported with equal intensity in this and other journals. Secondly, the quality of the literature in this area is uneven and frequently highly repetitive. The nature of the material extant, the greater proportion being made up of descriptive articles about the success of a certain type of plan, ranges from carefully controlled experimental studies to classroom vignettes of practices under one or another plan of organization.

The articles in this collection of readings were selected by applying several criteria. First, the recency of a particular article was a prime consideration. This volume recognizes historic contributions, but it deals with here and now. With the exception of the first article, which is included to set an historical background, the others report on or discuss what is happening now in elementary school reorganization. In fact, the plans and programs referred to are currently in operation and can be visited and observed. Secondly, the competence with which the article treats the essential problem of grade or elementary school reorganization, was a consideration. Thirdly, the manner of the stylistic presentation and the literary form guided the editors in their selection. Finally, the relationship of the article itself to the realities of what exists in the elementary schools of today (staff, curricula, organization) and the contribution it could make to the present discussion concerning the reorganization of the elementary schools was a basic consideration.

This collection of articles and the critical assessments and explanations that follow make up a basic book of readings that may be used in several ways. First, it may be used as a text in a course dealing with the organization of the elementary school. If Henry M. Brickell³ is correct that "new types of instructional programs are introduced by administrators," then it becomes ap-

³ *Organizing New York State for Educational Change* (Albany: The University of the State of New York, 1961), p. 22.

parent that this volume can be of service in any course in educational administration at any level. In addition, the needed knowledge of both teachers in service and teacher-education students about educational innovation and change is readily available in this volume and adaptable to each level of sophistication.

It is impossible to cover the panoramic scope of activities concerning the reorganization of the elementary schools in any one volume. It is equally difficult to categorize these reorganizational plans with precision to a point of absolute agreement on the part of the educational community.

The format of this volume is arbitrarily set up. It hopefully intends a grouping of the major educational elementary school reorganizational plans into categories, which in turn are made up of articles that deal with a seeming core of similarities. Part I consists of a set of general readings about the organization and reorganization of the elementary school. Part II consists of a set of readings about those plans which are referred to as ability or partial-ability grouping plans. Part III discusses departmentalization and limited-departmentalization organizational plans. Part IV consists of articles pertinent to team teaching and team learning, coordinate and collaborative teaching, and the variations of these types of plans. Part V consists of a set of readings that deal with the dual progress plan, multigrade and multiage grouping, and the manner in which they embrace various aspects of several approaches to reorganization. Part VI consists of a series of readings on the nongraded movement in the elementary school.

The arrangement and categorization of these subjects in a particular and closely interrelated manner has led the editors to exclude the usual type of index found in most books. Instead, the introduction to each of the six parts serves both as an analysis of content for each part as well as a particularization of the various aspects of each part. Advantages and disadvantages of each plan are listed at the end of each introduction. Each of the articles is given a very brief overview in terms of the basic theme of the author and is juxtaposed in terms of its content with the

other articles of the section. This gives the reader an immediate knowledge of any particular item he desires to find and any aspect or orientation concerning that item.

The editors wish to thank all of those who have granted permission to reprint the materials included in this book of readings. Because of the nature of the collection we have relied heavily in some instances on a major publication that has reported consistently in the area of school life we are considering. We are grateful to *Educational Leadership* for permitting considerable use of their material and would like to indicate that each of those items is copyrighted by the Association for Supervision and Curriculum Development.

MAURIE HILLSON

Teaneck, New Jersey
November 1964

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CHANGE
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IN ELEMENTARY SCHOOL
ORGANIZATION

PART I



The Organization and Reorganization of the Elementary School

IN ANY VITAL ORGANIZATION such as the schools, change and modification are constantly needed to meet the demands of a dynamic society. Controversies and problems lace the history of American education, especially where it has concerned the reorganization of the traditional structure of the elementary school. Much of the discussion in the article taken from "the first cyclopaedia of education in the English Language" of 1877 could take place today. Yet, interestingly, in that same volume, the dated problem of "whether phrenology affords a reliable means of discerning the mental peculiarities of different individuals, or how far such peculiarities are manifested in cerebral structure," was also presented.

The purpose of this first set of readings is to provide a general and informative overview for the reader. The first article from the cyclopaedia should alert the reader to those historical backgrounds that serve as the genesis of educational reorganization. In the other readings, an attempt is made to categorize the current educational terminology, define the nomenclature, and indicate the many varieties of reorganizational activities that have characterized the evolution of the American elementary school. To be more specific, there are discussions concerned with

adding to, or at least changing, the present vocabulary as it concerns individual differences, and analyses of criteria and research attendant to the kinds of school reorganization that have been attempted over the past years. Many terms will be defined in this section, terms that will be in constant use throughout the entire collection of readings. The critical summation by the editors that precedes each of the other five sections should also be an aid in bringing about precise definitions of these major elementary school reorganizational schemes.

Graded Schools

Graded schools are usually defined as schools in which the pupils are classified according to their progress in scholarship as compared with a course of study divided into grades, pupils of the same or a similar degree of proficiency being placed in the same class. An ungraded school, on the other hand, is one in which the pupils are taught individually, each one being advanced as far, and as fast, as circumstances permit, without regard to the progress of other pupils. The *graded system* is thus based upon classification; and its efficacy as a system must depend very greatly upon the accuracy with which the classification has been made. Grades, however, are not to be confounded with classes; the former are divisions of the course of study based upon various considerations, the latter are divisions of the school based upon uniformity of attainments. In a small school, the same number of grades may be needed as in a large school, the course of study being the same, and the promotions being made with equal frequency; hence, as the number of classes must be smaller, it will be necessary that each class should pursue two or more grades simultaneously or in succession; that is to say, the promotions

From *The Cyclopaedia of Education: A Dictionary of Information for the Use of Teachers, School Officers, Parents, and Others*, edited by Henry Kiddle and Alexander J. Schem (New York: E. Steiger, 1877), pp. 375-377.

from grade to grade will be more frequent than from class to class. On the other hand, in a large school, the number of classes may be greater than that of the grades, which will necessitate the forming of two or more classes, under separate teachers, in the same grade. In the management of a large school, this will be found to be better than a subdivision of the grades, requiring either an extension of the time for completing the course, or greater frequency in the promotions. In the small district schools of the United States, the ungraded system prevails, because each school is taught by a single teacher, and sometimes there is a want of uniformity in text-books; but in the cities the graded system prevails. The advantages of the graded system have been thus enumerated: (1) They economize the labor of instruction; (2) They reduce the cost of instruction, since a smaller number of teachers are required for effective work in a classified or graded school; (3) They make the instruction more effective, inasmuch as the teacher can more readily hear the lessons of an entire class than of the pupils separately, and thus there will be better opportunity for actual teaching, explanation, drill, etc.; (4) They facilitate good government and discipline, because all the pupils are kept constantly under the direct control and instruction of the teacher, and, besides, are kept constantly busy; (5) They afford a better means of inciting pupils to industry, by promoting their ambition to excel, inasmuch as there is a constant competition among the pupils of a class, which cannot exist when the pupils are instructed separately. On the other hand, many objections have been urged against the system of graded schools, chief among which is, that the interests of the individual pupil are often sacrificed to those of the many, the individual being merged in the mass. "As a mechanism," says E. E. White, in *Problems in Graded School Management*, a paper read before the National Educational Association, Aug. 4, 1874, "it [the graded system] demands that pupils of the same grade attend school with regularity, and that they possess equal attainments, equal mental capacity, equal vigor, equal home assistance and opportunity, and that they be instructed by teachers possessing equal ability and skill. But this uniformity does not exist. Teachers possess unequal skill and power. Pupils do not enter school at the same age; some attend only a portion of each year; others attend irregularly; and

the members of the same class possess unequal ability, and have unequal assistance and opportunity. This want of uniformity in *conditions* makes the mechanical operation of the system imperfect, and hence, its tendency is to force uniformity, thus sacrificing its true function as a means of education to its perfect action as a mechanism." There is no doubt that this difficulty is inherent in the system, and that no administration, however excellent, can wholly eliminate it. Various methods of procedure have, however, been suggested to diminish its injurious effects. That proposed by Superintendent W. T. Harris, of St. Louis, and carried out in the public schools of that city is frequent discriminative promotions. The following are the points on which the system is based: (1) The different rate of progress in study on the part of pupils of the same class, due to a difference in age, capacity, regularity of attendance, and opportunity; and (2) The continual diminution of the size of classes, particularly of the higher grades. "Provision," he says, "must be made for this difference in rates of progress by frequent reclassification; otherwise the school will become a lifeless machine." This arrangement, however, was a reaction against the system of annual promotions, which necessarily require wide grades and unfrequent changes in classification. The other extreme, according to the views of many educators experienced in school management and supervision, was approached in the recommendation by Superintendent Harris to require promotions as often as every ten weeks, and, besides that, to permit pupils "to move forward as fast as their abilities might permit." The objections to incidental discriminative promotion are the following: (1) It encourages precocity in the pupils; (2) It produces a tendency in the teacher to give an exclusive attention to the bright, intelligent pupils to the neglect of the dull ones, because in this way promotions are secured, which redound to the teacher's credit; (3) It deprives the pupils thus promoted out of the regular course, of the means of properly pursuing certain grades or parts of grades, inasmuch as, if placed from a lower grade into a class of pupils already advanced in the next higher one, they must take up the studies of that grade at the advanced point, without acquaintance with the preceding part of the grade, thus confusing the classification and embarrassing the teacher. Semi-annual promotions seem to be approved by the

majority of educators, with such an adjustment of the number of the grades of the course of study and the requirements of each, as will enable pupils of an average capacity to complete the amount of study prescribed in the half year. There is another danger connected with the graded-school system, as sometimes administered, to which allusion is often made. It *prescribes* too much, leaving to the teacher too little scope for the exercise of individual skill, judgment, and intelligence. "It is not important," says Mr. White, "that the several teachers accomplish the same result day by day, or week by week. Nothing is more ridiculous than the attempt to parcel out primary instruction, and tie it up in daily or weekly prescriptions, like a doctor's doses. This week the class is to take certain facts in geography; to count by twos to fifty (to sixty would be a fearful sin!); to draw the vertical lines of a cube; to learn to respect the aged, etc.!" This, however, with many other objections which are urged against the system of graded schools, is only a fault in administration. A system of this kind requires intelligent, earnest, and judicious direction and supervision; with this, ably seconded by well-trained and experienced teachers, it will approximate to individual teaching, and, in the powerful and wholesome stimulus which it constantly applies to the pupil, prove much more effective.

Graded schools are far more numerous in the United States than in England, or in most of the countries of continental Europe. The system is, however, beginning to be introduced. "The plan of teaching classes or grades in separate schoolrooms has been adopted," says Adams (*Free School System of the United States*, 1875), "in some of the Birmingham Board schools, and also in London, I believe, and has given great satisfaction." So essential has it been considered in the United States to the efficiency of a school that it should be graded, that no aid is given from the Peabody Fund except to graded schools.—See WELLS, *The Graded School* (New York, 1862); WICKERSHAM, *School Economy* (Phil., 1868); KIDDLE, etc., *How to Teach* (N.Y., 1874).

Unscrambling the Vocabulary of School Organization

John I. Goodlad and Kenneth Rehage

Is team teaching more effective than nongrading in providing for individual differences? Is ability grouping superior to grading in fostering academic achievement? Is heterogeneous grouping preferable to departmentalizing?

Such questions frequently are asked about the variety of procedures available for organizing schools. These questions would be asked less often if there were general agreement on a common understanding of the terms describing school organization. Team teaching, for instance, is not an alternative to nongrading. These terms describe different ways to fulfill two separate functions of school organization. Ability grouping can be used whether or not a school is graded, and a departmentalized school can have either heterogeneous or homogeneous grouping.

SOURCES OF CONFUSION

Schools are organized to serve specific functions. They must classify students and move them upward from a point of admission to a point of departure. *Vertical* organization serves this function. Schools also must divide the student body among available teachers. *Horizontal* organization serves this second function.

Confusion arises from a failure to differentiate between vertical and horizontal aspects of school organization. Grading, multigrading, and nongrading are the vertical organization plans from which to choose. The horizontal pattern may be determined by grouping children homogeneously or heterogeneously, by organizing the curriculum so as to emphasize the separateness of subjects or the interrelationships among them, by having self-contained or departmentalized classrooms, or by using any one of many possible patterns of interclass grouping.

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The remainder of this article will look further into the differences between vertical and horizontal plans of school organization.

VERTICAL SCHOOL ORGANIZATION

Grading has been the traditional way of organizing schools for the vertical progression of students. For example, an elementary school enrolling children aged five to twelve, is divided into seven year-long steps, starting with kindergarten and going successively through grades one to six. A rather specific body of subject matter is assigned to each grade level; textbooks are prepared for the grade; teachers are categorized as "first-grade" or "fifth-grade" teachers; and children refer to themselves as being in the "second grade" or going into the "sixth grade." The pieces fit together in an orderly fashion with a year of work for a grade of vertical progress through the school as the common denominator.

The graded system, long the predominant scheme of vertical school organization, is often criticized for ignoring individual differences among learners by demanding that all children cover the same material at approximately the same rate of speed. Those children who fail to keep up with a predetermined rate of progress for their grade are not promoted and are required to repeat the work of that grade.

Periodically, attempts are made to modify or depart from graded structure. In multigrading, for example, each class contains two or more grades simultaneously. Although grade labels are retained, children are permitted to work in several grades at once, depending on their progress in each subject. For example, in a multigraded class containing grades three, four, and five, a child could be in grade three for arithmetic, grade four for social studies, and grade five for reading.

Nongrading is an arrangement in which grade labels are removed from some or all classes. When grade labels are removed from kindergarten and the first three grades, the arrangement is known as a nongraded primary unit. A similar vertical arrangement for the customary grades four, five, and six is a nongraded intermediate unit.

Theoretically, grading and nongrading are the polar opposites among alternatives available for organizing a school vertically. In *pure* grading, the content of the instructional program and its sequential arrangement are determined by assignment of subject matter to various grade levels, by designation of instructional materials suitable for particular grade levels, and by promotion of pupils upon satisfactory completion of the work specified for each grade level. In *pure* nongrading, the sequence of content is determined by the inherent difficulty of the subject matter and the children's demonstrated ability to cope with it; materials are selected to match the spread of individual differences existing within the instructional group; and the children move upward according to their readiness to proceed. Promotion or nonpromotion does not exist as such. An important goal is to provide continuous progress for each child.

Nongrading and virtually all modifications of grading are intended to facilitate curricular and instructional provisions for the individual differences always present in a class group. However, no scheme of vertical school organization automatically makes these provisions. The removal of grade labels, for example, is no guarantee that teachers will take advantage of the opportunities nongrading is supposed to provide. A nongraded school with only grade labels removed remains a graded school, nonetheless.

Exponents of nongraded schools claim benefits with respect to pupil well-being and achievement which have not been proven conclusively. Critics of the nongraded plan claim that what nongrading purports to do can be accomplished as readily in graded schools. To date, research—most of it comparing pupil achievement in graded and nongraded schools—is inadequate and inconclusive. Some studies favor graded schools, some favor nongraded schools, and some show no significant differences between the two.

The crucial inadequacy of most such studies is the failure to identify two sets of characteristics by means of which nongraded and graded schools may be clearly differentiated. Consequently, the researchers often are not making a valid comparison. Several of the studies, for instance, report the use of ability or achievement grouping in the sample of nongraded schools selected but not in graded schools used for comparison. Are differ-

ences between pupils in these schools and in the sample of graded schools the product of graded or nongraded practices or of ability grouping?

Nongrading is a vertical plan of school organization. It cannot be compared with ability grouping or any other scheme of horizontal organization. Failure to understand this difference frequently leads to meaningless comparisons of organizational plans and, ultimately, to misleading conclusions.

HORIZONTAL SCHOOL ORGANIZATION

As stated earlier, a pattern of horizontal organization results when an identifiable cluster of students (e.g., all first-graders or all high school juniors) is divided into class groups and assigned to available teachers. Whereas vertical organization allows only two major alternatives—grading and nongrading—horizontal organization permits literally dozens of alternatives. In setting up horizontal class groups, priority considerations may be given to children, to the curriculum, or to teacher qualifications.

If the primary consideration in establishing a pattern of horizontal organization is children, then a choice must be made between homogeneity (likeness) and heterogeneity (difference) in pupils comprising each class group. If the choice is for homogeneity, the criterion of likeness may be age, size, interest, ability, achievement, or a combination of these and other factors. If the primary consideration is the curriculum, a choice may be made between separate subjects and various combinations of subjects as the basis for setting up class groups. If the primary consideration is teacher qualification, one choice is between the self-contained classroom (one teacher for all subjects) and departmentalization (a different teacher for each subject).

Thus simplified, horizontal organization begins to be comprehensible. However, schools often combine the results of several kinds of choices, which complicates understanding of the organization. A high school, for instance, might be semidepartmentalized, with a different teacher for each subject except for English and social studies, which are combined in a core curriculum and taught by one teacher. All except core classes might be set up according to pupil homogeneity in achievement. The over-all pattern of school organization might then be further complicated

by introducing vertical variety—nongraded classes in the core but graded classes in all other subjects.

Team teaching is one horizontal scheme that combines considerations of children, curriculum, and teacher qualifications in establishing class groups. It is a significant departure from the variety of horizontal plans existing up to the present, just as nongrading in vertical organization represents a significant departure from grading.

Unfortunately, the term *team teaching* is applied to so many different ventures in cooperative teaching that it has come to have many meanings. Communication would be enhanced if the term were used only in referring to ventures embracing all three of the following characteristics: (1) a hierarchy of personnel—team leader, master teacher, auxiliary teacher, teacher aide, intern teacher, clerk, and so forth; (2) a delineation of staff function based on differences in preparation, personal interests, and so on, or on the kinds of learning activities planned; (3) flexibility in grouping embracing all the students under supervision of a team.

Such a definition excludes all those cooperative teaching efforts in which there is no attempt to define a hierarchy of personnel. These efforts might better be called associated teaching.

Schools utilizing team teaching can be graded or nongraded. Since team teaching is a form of horizontal organization, and grading or nongrading is a form of vertical organization, these forms are not interchangeable devices for achieving common organizational functions. A school may practice nongrading and team teaching simultaneously.

TOWARD A COMMON VOCABULARY

Given all this variety and complexity in the organization of American schools, we may expect to find confusion in discourse, practice, and research. Moreover, the mere existence of complexity is a compelling argument for a more precise vocabulary.

Vertically, schools may be graded or nongraded or fall somewhere in between. Horizontally, schools may be organized into any one of many alternative patterns. But all these horizontal patterns are derived from only three essentially different kinds of

considerations: considerations of children, of the curriculum, or of teacher qualifications.

Any meaningful description of a school's over-all organizational pattern includes both vertical and horizontal aspects. Such description may be "nongrading (vertical) and ability grouping (horizontal)" or "grading (vertical) and team teaching (horizontal)" or "nongraded (vertical) and departmentalized (horizontal)." To describe a school as nongraded is to describe only half its organization. Likewise, to describe a school as practicing achievement grouping and departmentalization is to be quite descriptive of horizontal organization but to say nothing of vertical.

The use of a common vocabulary for analyzing and describing school organization is long overdue.

Grouping in the Elementary School

Harold G. Shane

While grouping in both elementary and secondary schools is a topic of perennial interest in this country, current demands for improved instructional quality and for greater individual attention, among other factors, make it of particular concern today. The resumé offered here consists of a brief statement of problems involved in grouping; a commentary on types of or approaches to grouping developed over a long period of years in the U.S.; and a summary of selected research and recent miscellaneous writings on the topic.

SOME PROBLEMS INVOLVED IN GROUPING

Along with the reporting of pupil progress and the dilemmas created by promotion policies, grouping has been one of the most persistent of the problems enlivening and complicating

elementary education. The following are examples of the difficulties encountered in establishing sound grouping practices.

1) Lack of explicit and reliable data pertaining to individual children. Many schools lack information with respect to intelligence, achievement, social adjustment, etc., at a given time, hence have little reliable evidence on which to base grouping schemes (assuming that agreement can be reached as to what constitutes sound grouping practice).

2) Pupil turnover, at least in some schools, makes grouping difficult because information on new entrants is fragmentary.

3) The uneven growth patterns of individual children make grouping hazardous. One is never completely certain that a particular child will long retain the personal and academic attributes governing his placement in a group.

4) The uneven social and academic profiles of most individual children complicate grouping, at least insofar as any type of ability grouping is concerned. Many children vary in achievement by as much as a year from one subject area to another. (E.g., a child's arithmetic computation score at the time he is in grade four, seventh month, may be 3.9 years, while his reading comprehension may be 5.8 years.)

5) Differences in the philosophy, experience, and competence existing among teachers in the same school building may place any *arbitrary* or *uniform* grouping policy in a precarious position.

6) Grouping is influenced by the maturity and competence of administrative leadership. No plan is superior to the effectiveness with which it is executed, and even grouping schemes of dubious value required by central administrative directives may be "*made to work well*" by an able principal and staff.

7) The nature of the curriculum—i.e., the locally-developed design for the experiences children share in school—may facilitate or preclude effective grouping.

8) The nature of teaching aids, such as adopted textbooks, and policies governing their use can have a positive or negative influence on grouping.

9) The size of the elementary school unit bears, at least indirectly, on grouping practices. Certain plans are feasible only

in schools enrolling 500 or more children; others are workable only in schools with appreciably fewer.

10) Personnel resources may "make or break" grouping plans. Some plans are feasible, for example, only when there is a principal with no teaching duties to absorb his time and/or when there are available such persons as school psychologists, a guidance corps, special teachers, personnel in the public health field, and so forth.

HISTORICALLY INTERESTING AND EDUCATIONALLY PROMISING PLANS

For over a century of U.S. education, diverse grouping plans have been initiated, discarded, modified, or gradually accepted on a widespread scale. Here is an overview, with annotations, of some plans and programs that have both cross-fertilized elementary education and given variety to the pedagogues of elementary teachers.

1) Ungraded groups. In an earlier day, children in small schools in grades 1-8 were taught by one teacher who handled all subjects (*and* janitorial duties), especially in 19th century U.S. These were the original ungraded schools. One-teacher schools are still common, but much less so, even, than in the 1940's.

2) Primary-intermediate groups. Introduced when the one-room school grew too large for one teacher to handle, this plan often resulted in a 1-4 and 5-8 "two room" or "two teacher" school.

3) Grade grouping. This term simply refers to an arrangement whereby one teacher works with a given grade group. Such a grade group is usually a part of an elementary school organized on a K-6 or K-8 plan. This is also, in effect, *chronological age grouping* or *heterogeneous grouping*.

4) Heterogeneous grouping. This is essentially the absence of a structured grouping plan, i.e., children enter the kindergarten or grade one at age five or six and are taught by the teacher to whom they are assigned irrespective of intelligence, achievement, etc. Individual differences may be met by program

enrichment, acceleration ("skipping"), and/or interclassroom grouping as in primary reading.

5) Homogeneous grouping. Also known as *ability grouping*, this plan frequently makes intelligence, readiness, and achievement test data the determinants of classroom placement.

6) X Y Z grouping. This is a form of ability grouping in which the X, Y, and Z labels refer to three levels of intelligence or to three levels of assumed potential performance in academic areas such as arithmetic.

7) Intra-subject-field grouping. This plan is most often used at the junior high and especially senior high (or 9-12) levels. E.g., at the New Trier Township High School (Winnetka, Illinois) a student may be in an "advanced ability" group in mathematics and in a "middle ability" group in English. As many as five levels have been used for such grouping.

8) "Vestibule" groups. The label here suggests the idea of an anteroom or small entrance room or hall which one enters before actually going into a house. For example, in some schools (e.g., Chicago at present) there are "1-c" groups in which less mature children are enrolled prior to progressing through "1-b" and "1-a" in first grade. Thus certain children, without "failing" or repeating, spend one and one-half semesters in grade one. "Vestibule" groups or classifications have also been used at the threshold of high school to help slow learners and children with cultural flaws increase their prospects of success in the secondary school. That is, students may spend four and one-half or five years in progressing from the eighth grade to the high-school diploma.

9) Cooperative Group plan. Originally conceived by James F. Hosic in the 1920's, this plan calls for *teachers* to work in small cooperative groups under a group chairman. It is a novel twist, since all other plans involve grouping *children*. Under it, staff members were in charge of special rooms (e.g., a literature, composition, story-telling, reading, spelling center) but were not so much "subject specialists" as specialists in teaching children. Work for a given group of children was planned at frequent intervals by the "cooperating group" of teachers, who sought to extract from their special area rooms the contributions that each center might make to a unified learning experience.

10) Winnetka Plan grouping. Pupil progress in Winnetka

has been influenced for many years by self-instructional materials and what might be called an "individual-within-the-group" approach to instruction. The basic classroom unit in grades 1-6 in Winnetka is heterogeneous, but *individual* progress continues to be personalized by the use of record forms or "goal cards," which encourage optimum academic growth by each child. Thus, in a sense, individual progress within the group constitutes a grouping device which has many of the merits of ability grouping without some of the problems of so-called homogeneous grouping.

11) Dalton Plan grouping. The classic Dalton Plan was based upon individual progress, group interaction, and a time-budgeting "contract plan" to facilitate individual achievement. Subject matter was grouped in two component parts, the academic and the physical-social. The former was presented predominantly by individualized instruction, the latter by the whole-class method. The work for each grade was laid out in the form of "contracts," which described work to be done over a period of weeks.

12) Multiple-track grouping. This is a type of ability grouping in which children of varied ability complete a given number of units or topics at different rates of speed contingent upon individual ability. An historically important multiple-track plan was developed late in the 19th century by Preston W. Search in Pueblo, Colorado. In brief, the multiple-track plan permitted some children to finish eight years of elementary school in seven years, while others (on a slower track) might take up to nine years to complete the same tasks. Thus three ability groups were involved, and the *amount*, not the *nature*, of requirement was "scaled down" for slower learning children in a given year, though all children presumably completed the basic requirements before leaving the elementary school.

13) Platoon grouping. Platoon grouping goes back to 1900, when it was devised by William A. Wirt for use in Bluffton, Indiana. In broad terms, this plan sectioned children into two groups (platoons) so scheduled as to have one group studying fundamental subjects in classrooms while the second group used special rooms for activities. As originally conceived, the plan was designed to encourage efficient use of the school plant and to achieve balance between academic and social activity or creative

work. The platoon plan also was known as the Gary Plan (since it was best known for its application in Gary), and the "Work-Study-Play" plan.

14) The Woodring Plan. A plan for reorganizing the American school system advocated by Paul Woodring in 1957 has certain features which involve grouping. In brief, Woodring envisioned grouping aimed at helping both the slower and faster pupils in a manner somewhat reminiscent of the multiple-track and other historically interesting proposals. Woodring suggested that the K-8 organization be divided between an ungraded primary school and a middle elementary school. The more able children would spend as little as two years in the primary, moving to the middle school as early as age seven. The less able might remain in the ungraded primary through age nine. He envisioned the bright children leaving elementary school at age 11, the dull leaving at, perhaps, age 13. Woodring created no entirely new plan, but developed a synthesis of the ungraded, multiple-track, homogeneous, and individualized concepts.

15) Social maturity grouping. A rather loosely defined concept, this one suggests that grouping be heterogeneous but that children be grouped when they leave kindergarten, for example, into three first grades on the basis of social development and friendship patterns rather than on the basis of ability or sheer chance. This plan implies the exercise of professional judgment and the use of available test data in assigning boys and girls to "well balanced" groups, with the most mature and the least mature assigned to separate classrooms.

16) Developmental grouping. Another term used loosely, this one apparently connotes an approach to grouping roughly comparable to "social maturity" grouping.

17) Organismic age grouping. Also a loosely used term, organismic age grouping was apparently coined by persons attempting to apply Willard Olson's concept of organismic age to the grouping of children at varied levels of maturity. In practice, the term probably implies policies similar to those associated with "social maturity" grouping, plus study of various indices of organismic age as determinants of group structure.

18) Social maturity-teacher personality grouping. This refers to "social maturity" grouping coupled or linked to a considera-

tion of teacher personality in the assignment of children to a given classroom. It recognizes that *teachers* as well as *children* vary as individuals and implies recognition of the assumption that some teachers are more effective with less mature children and that some are most effective with the more mature children in an ungraded primary or "social maturity" grouping situation.

19) Ungraded primary groups. This term may be used to describe a situation in which grade levels as such are abandoned at the primary level and where children work together in an environment conducive both to individual and to group progress without reference to precise grade level standards or norms. The teacher in the ungraded primary may work with the same group for two and occasionally three years. It is her purpose to help children progress as far and as fast as they can with less regard for conventional minimum essentials than for total human development.

20) Ungraded intermediate plan. Not widely used, the ungraded intermediate approach to grouping involves assigning a group of children in, say, grades 3-5 or 4-5 to one teacher. The program or curricular design is appreciably influenced by teacher-pupil planning. As distinct from the split or "hyphenated" group (see #21 below), the ungraded intermediate grouping is intended to enrich and to improve learning rather than merely to compensate for uneven distribution of pupil enrollment.

21) Split grade or "hyphenated" groups. The "hyphenated" or split group is one enrolling children from two and occasionally three grade levels. As a rule, groups are split in the smaller schools when, for instance, there are too many children in the fourth and fifth grades for efficient instruction, yet too few to justify dividing both grades. When this situation occurs, a division may be made as follows:

1959-60	1960-61
3rd grade—40 pupils	4th grade—30 pupils
4th grade—40 pupils	4-5 grade—20 pupils
	5th grade—30 pupils
Total 80	Total 80

The "hyphenated" grouping plan is obviously an administrative-organizational device for securing smaller classes while adding one rather than two new teachers.

22) Departmental grouping. Rarely used below the intermediate level, a departmental program is one in which children move from one classroom to another for instruction in the several subject fields by different teachers. The departmental program is the antithesis of the unit classroom program in which one teacher handles all (or most) subject areas for one group of children.

23) Intra-classroom grouping. A number of teachers make use of various schemes for grouping within the classroom. This is especially true of primary teachers, who create two or more groups when teaching reading. As a rule, intra-classroom grouping is "part-time ability grouping," designed to permit the teacher to work with youngsters of roughly comparable ability. (See also #26, "grouping through teacher-pupil planning.")

24) Inter-classroom grouping. Some schools have developed the idea of grouping children not within the classroom but within a given grade or grade range for instruction in a particular subject field (commonly reading), presumably to allow for individual differences. This type of grouping requires that all three teachers in grade five, for instance, schedule reading at the same hour. Then each of the three fifth grade teachers works with the children who remain in or come to her room (on the basis of reading ability) for instruction in reading. Frequently several grade levels are involved in this temporary inter-classroom grouping. For example, *all* children may, at a given time, exchange rooms for reading activities, the children going to the classrooms which presumably correspond to the level of their reading ability. E.g., the fourth grade child reading at the third grade level would report to the third grade room.

25) Inter-grade ability grouping. This is very similar to inter-classroom grouping (described above) and to departmentalized grouping, but is limited exclusively to shifts made within a single grade. For example, three fifth grade teachers may schedule their mathematics period for a given hour daily, then shuffle their enrollment according to ability so that one teacher works with the children in the top-achieving group, one with the middle-, and one with the slow-achieving section.

26) Grouping within the classroom through teacher-pupil planning. Such grouping involves the creative or emergent planning of experiences with children in such ways as will eventuate

in the selection of various pupil activities to be developed and pupil responsibilities to be carried out. Once a topic, project, or unit has been selected, the teacher and children discuss: a) What do we already know about this topic? b) What do we want to find out? c) How shall we go about it? At point c) various class committees or groups are formed, each of which assumes certain responsibilities for assembling information, for construction work, etc. Teacher guidance is essential to insure that the children volunteering for or assigned to these temporary groupings are challenged by the work on the one hand, yet are not frustrated by a too-difficult task on the other.

27) Self-selection grouping. This term is rather closely related to #26 above. It implies the creation of a rich environment which is also diversified so as to provide a variety of activities or projects from among which children can "self select" work in which they will engage (individually and or in groups) in conjunction with a topic or subject which promises to be a sound "center of interest" or "group interest" compatible with the developmental levels in the group.

28) Extra-curricular activity grouping. Especially in the upper grades, many children may be involved in such activities as band, orchestra, or sports. This type of grouping is designed to group children (especially in semi-departmental or departmental programs) so that those in, say, the orchestra can be free to rehearse or practice at the same hours during the week. To serve this purpose, children in the school orchestra, for instance, have their programs or groupings so designed as to free them for rehearsal at the same hour of the day.

29) Special grouping for the gifted. In schools with large enough enrollments to permit it, there may be special groupings for high I.Q. children which go beyond the provisions of mere ability grouping and which segregate these high I.Q. pupils in special programs or even in special schools or centers.

30) "Opportunity Room" grouping for the slow learning or mentally handicapped. For many years, the educable mentally handicapped or trainable mentally handicapped child has, in some schools, been placed in special ungraded groups with small teacher-pupil ratios. Special instruction and training are provided, usually for children with I.Q.'s of 70 or below.

31) "Self-Realization Room" grouping for the gifted. The S-R room is the reverse or antithesis of the so-called opportunity room for the slow learner and, indeed, is a "grouping" plan only in a very broad sense. In brief, the S-R room is one presided over by a highly capable teacher, well-equipped with study and research aids, and open during the day for gifted children in grades 1-6 or 1-8 to use as they see fit. This plan is based on the assumption that the gifted will be placed in the regular classroom but will also be free to supplement their personal-intellectual development under expert guidance when they have completed basic work with their peers or age-mates. In a school of 500 or 600 pupils, perhaps twenty to thirty would have S-R room privileges and responsibilities. That is, only from one to three youngsters would be likely to come from each grade level.

32) Ungraded four and five year old kindergarten grouping. A few places have introduced "ungraded" kindergarten programs for four and five year olds. Depending on his social and intellectual maturity, the child may spend from one to three years at the kindergarten level. This approach to grouping is designed to reduce the range of individual difference.

SELECTED RESEARCH AND WRITING

The brief summary of research data and writings on grouping which follows focuses on the 1950's, ending with 1958; hence many significant items of an earlier period are omitted.¹

Research of recent date dealing with grouping is quite extensive. Shane (18), following a survey of nationally recognized suburban elementary schools, reported that there is a trend away from chronological age grouping and toward grouping on the basis of social maturity in the early 1950's. Ability grouping was the least common in his selected sample, which probably reflected liberal administrative thinking.

Among writers expressing enthusiasm for ungraded primary grouping are Anderson (2), Kelly (12), and Polkinghorne (15). Anderson, after some years of experience with the plan in Park

¹ The writer drew upon a section he wrote for the 1960 edition of the *Encyclopedia of Educational Research* in preparing this resumé of educational writings.

Forest, Illinois, concluded that it stimulates improved instruction and improves mental health of children. Kelly reviewed ten years of an ungraded primary program in Milwaukee. He concludes that it is psychologically desirable, enhances individualized teaching, and facilitates good curricular practices. Polkinghorne ascertained by questioning 130 primary group parents that the ungraded approach is popular with both parents and children. Parents believe that the children are helped significantly in making adjustments to the third grade. Two articles by Goodlad (7, 8) provide background for understanding the merits of ungraded plan, and his recent book, written in collaboration with Anderson² [see review, March KAPPAN] is an excellent and complete statement of the program and of strategy for achieving it. Austin (3) obtained information on the overall status of the ungraded primary and ascertained that developmental values were sought by the schools using this grouping or organizational plan.

Sociometric grouping as a device for enhancing group morale when children are placed in the next higher grade was used with some success, according to Alt (1), in a Pueblo, Colorado, school. Dineen and Gerry (5) experimented with 170 children at the sixth grade level to ascertain whether sociometric procedures can be used to improve human relations. Socioeconomic classroom cleavages, they state, were reduced or weakened but not eliminated by sociometric grouping.

Blumenthal (4), in a New York City study, attempted to gauge the influence of heterogeneous groupings by correlating chronological age and achievement, a relationship which proved, unexpectedly, to be negative. He concluded that mental rather than chronological age is the better guide to grade grouping. Edmiston and Benfer (6) examined the relation between group achievement and range in ability within the group, using sixteen fifth and sixth grades in Hamilton, Ohio. With respect to the academic skill of reading, they concluded that a wide I.Q. range within a classroom eventuates in greater individual progress than when the I.Q.'s are comparable. The Blumenthal and Edmiston-Benfer researches, while not parallel, illustrate the difficulty of generalizing with respect to grouping. The Blumenthal data sug-

² John I. Goodlad and Robert H. Anderson, *The Nongraded Elementary School*, New York: Harcourt, Brace, 1959.



gest the importance of the M.A. in relation to grouping, while the latter study indicates that a heterogeneous group facilitates success, at least in reading. Such findings dramatize the fact that many variables determine outcomes in experiments in this area.

Further examples of recent conflicting evidence were provided by Roberts (16), Houston (10), and Lawson (13), who were encouraged by the results of ability grouping, while Russell (17) reported that inter-class ability grouping for reading resulted in no significant gains for children thus grouped. Of course, no two of these studies were exactly comparable, a fact which further confuses the situation. An extensive and definite study of ability grouping remains to be done, and this constitutes an important challenge to the profession.

Jones' study (11) of 288 children, divided so as to provide a control group, suggests a possible solution to the heterogeneous vs. homogeneous controversy. Jones concerned himself with the nature of instruction rather than with grouping *per se*, and compared the outcomes of individually planned teaching with a prescribed curricular program. Children in the flexible-programs group, whether bright, normal, or dull, made more academic gains than those in the formal program. Perhaps an able teacher, given freedom to work creatively, is more important by far than any mechanical scheme, however ingenious. Not only Jones' inquiry but that of Holmes and Harvey (9) supports this comfortable conclusion. Holmes and Harvey compared permanent and flexible arithmetic groupings at the intermediate level and ultimately concluded that an effective teacher, one sensitive to pupil's individuality, was a more influential factor than the grouping scheme they devised.

Speaking of homogeneous grouping, two investigators, the Luchinses (14), explored 190 children's attitudes toward being sectioned in terms of ability. Interviews with these youngsters showed that they felt their parents wanted them to be in a top ability group. Moreover, if they were in a "bright" group they preferred to be there even if they disliked the teacher. Children in two low ability groups were consistently willing to have a poor teacher if only they could be in a "bright" group. The Luchinses felt that their interviews clearly show that children classed as

"dull" feel stigmatized and that the "bright" ones are snobbish with respect to their top-group status.

SOME CONCLUSIONS

As American elementary education stands on the threshold of the 1960's, the matter of grouping children continues to be characterized by: 1) problems of terminology, including overlapping terminology and conflicting interpretations of terminology, 2) insufficient comprehensive research data and conflicting data, and 3) appreciable differences in both practice and opinion.

It seems reasonable to conclude that the "best" grouping procedures are likely to differ from one school to another, the most desirable practice often being dependent upon such factors as: 1) the competence and maturity of the local staff; 2) the nature of the physical plant, 3) school size, 4) class size, 5) the local curriculum or design of instruction, and 6) a highly intangible quality—the intensity of the desire of a teacher or a group of teachers to make a particular plan work effectively.

The philosophy and ability of the able teacher are undoubtedly more important than any grouping plan, however ingenious it may be, with respect to creating a good environment for teaching and learning.

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Needed: A New Vocabulary for Individual Differences

Alexander Frazier

Today there is widespread concern that our schools make better provisions for individual differences.

The renewed interest has led some of us to return to outmoded practices. Others of us, resistant to pressures by lay or semi-professional forces, have elevated to a slogan of inaction a widely quoted quip: "Don't just do something; stand there!"

What we are actually saying is that we would like to move forward. Today we do know better how to provide for learners than we did forty or fifty years ago. Why then have practices relinquished over the years returned to haunt us?

A CARGO OF YESTERDAY'S IDEAS

As we search for answers to this question, we may find it profitable to re-examine the limitations that may come from the vocabulary we use for dealing with individual differences.

Much of this vocabulary is outmoded. Derived from the early days of intelligence tests, it is based on extremely limited ideas of learning, teaching, and curriculum planning.

Perhaps it was inevitable that Terman in 1916, in his classic work on intelligence testing, should have advocated differentiated "courses of study" to allow each child "to progress at the rate which is normal for him, whether that rate be rapid or slow." Behind Terman's zeal was the deeply compassionate desire to free some children from the frustration of failure and others from the boredom of understimulation. As he saw it, "the remedy" was "to measure out the work for each child in proportion to his mental ability" (1). With the spotlight on the extremes at either end of "the curve," the movement to meet individual differences was, from the beginning, narrowed to a

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major concern for the children who were most different. In fact, the term *individual* was used more often to describe the children at the extremes than to distinguish one child from another.

ISSUES OF ANOTHER ERA

Terman was aware of the many kinds of interferences that can hinder the functioning of intelligence. He also acknowledged differences in the quality or the kind of learning and thinking, at least for what he called defectives. But his recommendations slighted these distinctions. Consequently, the definition of what was involved in the use of intelligence was oversimplified. As approaches to learning, teaching, and curriculum development were reviewed for their adequacy in meeting individual differences (2), three issues emerged: How fast? How much? For how few?

Although we now know much better, we remain victims of this vocabulary. We need to consolidate our conception of what education involves and free ourselves from the restrictions of thinking chiefly in terms of rate, quantity, and small groups of children who are "the different."

THREE LIBERATING IDEAS

Toward this end, it may be useful to review three liberating ideas. These ideas are familiar enough, but we have not used them to clear out the underbrush in our thinking or to revitalize our vocabulary.

The enlightened educator no longer thinks of learning primarily in terms of rate. *Learning is multidimensional*. The act of learning is highly complex. How fast or how slow a learner performs tell us no more of his power than many other qualities tell us—his capacity for insight, his ability to relate what he learns to what he already knows, his willingness to confront the unfamiliar and stay with it long enough to make sense out of it.

We make many distinctions among kinds of learning. Learning to operate machines is likely to require capacities, aptitudes, and ways of learning that are different from those needed in learning to deal with abstractions or generalizations. Learning to find, assemble, organize, evaluate, and communicate knowledge

may differ from the process of inventing or creating something. Living and working with others may involve still other kinds of learning.

All these processes may differ greatly from the kind of school learning too often stressed in the old days—the memorizing of preselected and preorganized facts.

Rate is one dimension of learning, but only one of many.

Another major idea that should help us clear away the underbrush relates to quantity. *Learning is limitless*. Whatever the child learns is only a beginning. In today's world we are faced with the task of continuous learning.

True, some selection must be made for younger learners, but the extent to which we need to place limits on what is to be learned in school is open to question. In contrast to the closely graded program of an earlier era, our current conception involves concern for the rich environment, for self-selection, for learning in larger wholes, for learning as open rather than as closed. Even with beginning reading and arithmetic, we are trying out new ways to emancipate the learner.

We are finding that, when the individual is psychologically and methodologically free to do so, he chooses to learn much more than he has to. Our role is not so much to lay out the amount to be learned as to arrange for the learner to make use of whatever he can that promises to help him make increasing sense out of his world.

The third idea that should liberate us relates to defining as "different" chiefly the children at each end of the curve. *Learning is personal*. Possessed of an innate drive to learn, everyone strives as he can to learn what he feels he needs to know. The key terms in this statement are *as he can* and *what he feels*. We know much more than we once did about what helps and what hinders the use or even the development of capacity (3). We know, too, much more than we did about the will to learn. Motivation, if we still use the word, is seen as arising from attitudes derived in part from the subculture from which the person comes and operating within the values of the larger culture. Among our chief concerns are to free capacity and to build the will to learn.

The learner himself decides what is to be learned. Because this choice is his, his basis for choice must concern us. We try to assess his needs and to set up conditions that are most enabling

for him. Looking at the range of learners with whom we are working, we try to provide conditions that will be the most enabling for all. We have long since repudiated the idea that all individuals are different, only some are more so. Each learner is uniquely himself, whether his intelligence quotient is 98 or 140 or 75; and if we wish to do our best for any one learner, we must deal with him as a person.

Thus we try to personalize learning or individualize instruction. To confine our attention to the needs of the top and bottom 5 per cent becomes unthinkable. Yet under current pressures, we have returned to anachronistic practices that were first defined in the vocabulary of another day when it seemed that the existing program was sound and that all that was needed was to vary "the progress rate," to use a term that still survives, for a select few.

These, then, are some of the liberating ideas that should help us re-examine our vocabulary and rid ourselves of an over-concern for rate, quantity, and selectivity in thinking about individual differences. The need for this liberation may be highlighted by contrasting two pictures of learning, teaching, and curriculum development.

On the one hand, we have a program composed of pre-selected information and skills arranged sequentially in graded steps through which the learner is to be guided. In this program all learners are expected to learn in the same way and to learn the same amount. They differ chiefly in how long it takes them. Most learners learn at about the same rate and can be guided through together. A few learn more slowly and thus need more time. A few others can learn faster and can "romp through" the program (4), thus finishing school earlier than most students.

On the other hand, a program based on the best current thinking could be described as striving to support the learner in his purposes by helping him remain or become open to new experiences and by making available to him possibilities for ever richer, broader, and deeper learnings. The search for sense and satisfaction is carried on within, but not limited by, a framework of possibilities, with the teacher assuming responsibility for guiding the learner toward increasing proficiency and maturity. In this program the emphasis goes to richness of resources for learning, within any framework; to the quality of the

learning experience, rather than to anything that can be quantified in terms of items of content or measured in terms of time; and to the individual learner, who is expected to learn some things in common with others but to learn other things that perhaps only he can or needs or wants to learn. Rather than being content "to personalize our references to the talented and retarded, but to treat other pupils as a faceless mass," as one educator has recently characterized some of the old approaches newly revived, we believe in "giving all our pupils adequate attention and comparable encouragement" (5).

ANACHRONISMS RE-EXAMINED

We may wish to take a second look at some of the anachronisms revived in recent years to "take care of" individual differences. We are dealing here with provisions designed to provide for the able. The program of special education for the mentally handicapped may need closer examination (6), but we will consider only provisions for children generally defined as capable of profiting from the regular program. We are interested in the modifications of this program that are being revived and promoted as promising to provide more adequately for individual differences.

LEVELS OF INSTRUCTION

The idea of further subdividing already closely graded instruction so that groups of learners can be guided through it more efficiently is most fully developed in some of the plans for the ungraded primary (7). Levels are set up to correspond to sequentially arranged materials, usually textbooks in a reading series, through which abler learners move more rapidly and the less able more slowly.

Ironically, the ungraded school thus defined becomes a school of many levels. How much can be covered how quickly—this criterion of progress combines quantity and rate to carry the old conception of the curriculum to a new point of impoverishment. The boundaries of the narrowed program close in even more tightly on all learners.

Likewise the varied and ingenious ways now being devised

to reshuffle pupils in reading and arithmetic retreat to the older conception that rate and quantity are the guiding principles of learning and teaching. Such nakedly rate-centered approaches deny everything we have found out about the virtues of richness and variety.

GROUPING

However ingeniously set up, the ability-achievement grouping of learners into slow, average, and fast (or "gifted") groups still clings to the outmoded conception that learning has one dimension, rate, and that teaching is largely concerned with quantity. Such grouping depends also on the notion that something other than the regular program is needed for the slow learners and the fast learners, while for the rest, the program as it is suffices.

In practice, however, usually little is attempted for the groups at either end. For the most part, grouping has been based on the assumption that by separating "the slow" and "the fast" from the great "faceless" middle group we will somehow magically release all pupils to proceed more regularly and successfully through the fixed program. The slow pupils will not be frustrated by having to "keep up" with the others. The fast will be freed to "forge ahead"—but not too far! The rest will "plod along" as usual.

The conception of program behind this solution to the problem of providing for individual differences is so outdated that many of us have been reluctant to return to it. A clarification of the sources of its barrenness may lead us to redirect our energies to more creative attempts to bring to all children a truly challenging program.

SPECIAL PROVISIONS

Adding extras for the abler learners is another practice that has been revived to try to do more for pupils who are thought of as most different. Classes late in the afternoon or on Saturday, summer seminars or workshops, or sequestration after lunch three times a week—these are the ways such special pro-

visions are made. Behind this approach is the conviction that the other children could not profit from such provisions. They have enough to do to get through the regular program.

The abler pupils are those for whom the regular program is too easy (that is, too quickly got through) and for whom harder or more challenging studies are appropriate. These are the pupils who finish their assigned lessons before the other children and have more time than the rest to paint at the easel, browse at the bookshelves, and tinker in the science corner. Now they are to have more such opportunities.

The unfairness of this approach is matched only by its failure to make use of the possibilities for challenging all children that can be provided in a program that is free of the strait jacket of rate and quantity and concerned with the learning of every child, not just a few.

ACCELERATION

While there is no current widespread movement to accelerate learning by promoting children ahead of their age group (we have learned some things from our thirty years of child study), there have been many attempts to accelerate learning by bringing more advanced learnings down to lower grade levels. This type of acceleration is now sometimes linked to grouping, either year-long grouping or "afternoon" grouping. The fastest moving fourth grade, having covered the regular program in half the time the other pupils require, may be given fifth-grade arithmetic textbooks in the middle of the year.

This type of acceleration may also be practiced by grouping in the classroom, in much the same way as in the traditional reading program. Its extension seems to be less challenged in arithmetic than in any other subject. It is unlikely that a fifth grade would attempt to complete its social-studies course ahead of schedule to get into sixth-grade geography or its science course to get on to next year's topics of study.

Acceleration, which is the essence of rate-centered learning gone furthest afield from the best current thinking about learning, is obviously seen as most appropriate for those subjects in which what is to be learned has been most carefully graded and

arranged in supposedly logical sequences. Acceleration is unnecessary in an approach that sees learning as multidimensional and limitless and that conceives of good teaching and good programming as placing the learner in a richly stimulating environment at every grade level.

ENRICHMENT

We are likely to regard enrichment as a more acceptable way of providing for individual differences than the other practices we have discussed. Yet enrichment is also based on the idea of a fixed curriculum closely limited to what everybody must know and through which pupils move at differing rates. Pupils who get through first have added experiences, a conception of caring for individual differences that arises from the conviction that the fixed program is adequate for most children but inadequate, quantitatively speaking, for a few others.

As we have tried to stem the tide toward other anachronisms, we have been better disposed toward enrichment because we do believe in enriched learning and this alternative can be faced without too much administrative manipulation. Many school systems have published reports on ways good teachers have found to keep bright children busy, often, as we have remarked more or less humorously, as substitutes for making housekeepers or errand-runners out of them.

Behind our greater acceptance of enrichment may well be the belief that many, if not most, programs need enrichment. They need to be more than routine, unexciting outlines of what most children can and must learn.

These, then, are some of the most widely resuscitated practices with which we are plagued. Most of them are attempts to find administrative solutions to curriculum problems. If our concern with learning is chiefly with how fast a child can cover what we lay out for him and if we lay out for children only what most children can eventually cover, then such devices may seem to make sense.

But if we believe that learning has many dimensions, if we believe that what is to be learned has its own continuity and virtually limitless boundaries, if we believe that a good program

is one that stimulates each child to become personally and deeply involved with discovering himself and creating or re-creating his own world, then such devices make no sense at all. Thus it is that we cry out to ourselves, "Don't just do something; stand there!"

MORE PROMISING CONCERNS

Yet simply taking a stand is not enough. Defensiveness tends to force one into immobility. Surely there are too many places where we can improve our program to take care of individual needs for us to let ourselves become immobilized.

It may be well to conclude with a series of sample questions for which we need better answers as we move to bring our practice into balance with our best conceptions of learning, teaching, and programing. These are simply notes on our needs, offered as indicative of how we should be, and increasingly are, spending our energies (8).

1) How can we compensate for the impoverished home background of some of our pupils? Some children are handicapped by their limited language experience and by lack of experience with favored subject matter and favored concepts presented in our schools. If we really take this deprivation seriously, what might we do (9)?

2) What helps children develop the adequate self-concept that is supposed to be essential for full self-development? Some psychologists are telling us that how children feel about themselves affects their feelings toward others and their openness to new experience. What helps children develop a sense of personal adequacy? What hinders?

3) What makes a good kindergarten? With the schedule for the kindergarten firmly established and the materials thoroughly commercialized, what room is there for re-examination or redefinition of our purposes? Have we become completely attached to our routines, or can we open our eyes to the needs of today's five-year-olds?

4) How far shall we go in arithmetic? Closely graded instruction in arithmetic has imposed ceilings on many children

in learning to deal with their environment mathematically. If we free children to learn what they feel they need to know to make increasing sense out of their world, what does this mean for our making sure they learn what we believe they must?

5) Is the social-studies program in the primary grades outmoded? Children know more today of the wider world around them. Does this mean that the concentric circles framework (home, neighborhood, immediate community) should be modified or replaced (10)? What are children learning from their total culture that might provide us with cues to use in furthering their learning?

6) What may an ungraded primary be expected to accomplish? One of the most promising recent developments has seemed to be the idea of playing down the graded concept in grouping elementary-school children. However, some ungraded primary programs in operation have a proliferation of levels defined by closely graded teaching materials. Can we succeed in rescuing the idea of ungraded schooling from some of its advocates?

7) Can we teach children to be more creative? Most of the effort to study creativity has been directed to analysis of the creative personality, but now attention is being turned to the process of learning to create (11). Should we examine our own practices carefully and play up those that encourage creative behavior and curb those that tend to teach children to conform to routine patterns of response?

Questions like these promise to give us new understanding that will enable us to move from the view that our school program is adequate for all but a selected few to the view that we can develop a much better program for everybody. A changed outlook will enable us to change our practices with more confidence.

We may need to clarify our vocabulary so that we can use it more effectively in eradicating outmoded conceptions of learning, teaching, and curriculum development that cling to such terms as *slow learner* and *enrichment*. Our vocabulary is highly important. One literate critic of society has recently pointed out that "the language we use to inquire into and negotiate our ac-

tions, is no secondary factor, but a practical and radical element in itself. To take a meaning from experience, and to try to make it active, is in fact our process of growth. Some of these meanings we receive and re-create. Others we must make for ourselves, and try to communicate. The human crisis is always a crisis of understanding: what we genuinely understand we can do" (12). If we want to emerge with dignity from the educational crisis that puts levels of instruction, grouping, special provisions, acceleration, and enrichment ahead of thoroughly rethinking our program and ridding it of limitations that may keep what we offer children from being fully challenging to them all, then we need to learn to use the new vocabulary much more precisely. We make new meanings by discriminating more carefully between concepts that are outmoded and concepts that are forward-looking. To return to our critic, if we genuinely understand what we mean to do, then we can do it.

NOTES

1) Lewis M. Terman, *The Measurement of Intelligence* (Boston: Houghton Mifflin Co., 1916), p. 4.

2) For a fuller account of the origins and development of the old vocabulary, see A. Harry Passow, "Individualization of Instruction" (Washington: Association for Supervision and Curriculum Development, undated; mimeographed).

3) See in particular Arthur W. Coombs, "Personality Theory and Its Implications for Curriculum Development," in *Learning More about Learning*, ed. Alexander Frazier (Washington: Association for Supervision and Curriculum Development, 1959).

4) This expression is used in A. A. Lumsdaine, "Teaching Machines and Self-Instructional Materials," *Audio-Visual Communication Review*, VII (Summer, 1959), 164: "Third, the student proceeds on an individual basis at his own rate—faster students romping through an instructional sequence very rapidly."

5) John H. Fischer, "Address to the Graduates," Convocation of Teachers College, Columbia University, June 1, 1960 (New York: The author; mimeographed).

6) Samuel Kirk, *The Early Education of the Mentally Retarded* (Urbana: University of Illinois Press, 1958).

7) John I. Goodlad and Robert H. Anderson, *The Non-graded Elementary School* (New York: Harcourt, Brace & Co., 1959).

8) This list of questions is adapted from an address made by the writer at the National Educational Association Drive-In Conference on Elementary Education held in Washington, D.C., on May 7, 1960.

9) For an account of what was done with one class of first-grade repeaters, see Paul H. Bowman, "Personality and Scholastic Underachievement," in *Freeing Capacity to Learn*, ed. Alexander Frazier (Washington: Association for Supervision and Curriculum Development, 1960).

10) Alexander Frazier, "Raising Our Sights in the Primary Social Studies," *Social Education*, XXIII (November, 1959), 337-40.

11) E. Paul Torrance, various mimeographed reports of research in creativity (Minneapolis: Bureau of Educational Research, University of Minnesota, undated); see also Harold H. Anderson, ed., *Creativity and Its Cultivation* (New York: Harper & Bros., 1959).

12) Raymond Williams, *Culture and Society, 1780-1950* (New York: Columbia University Press, 1958), p. 338.

The Maze of the Research on Ability Grouping

A. Harry Passow

I

In the concern for improving the educational provisions for the gifted as well as for upgrading the quality of education for all students, questions about the relative advantages and dis-

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advantages of ability grouping have once again been raised. A great deal of sentiment, both pro and con, about the merits of ability grouping is recorded in the literature together with descriptive accounts of various practices and programs. In the search for research findings, the quantity is great (dating back forty years or more), the quality is irregular, and the results generally inconclusive for reasons which soon become apparent.

A steady flow of studies and discussions about grouping began in the early 1920's, reached a peak in the mid-1930's, and then dwindled sharply. Surveying the status of and trends in grouping in 1932, Billett observed. "Perhaps no plan, method, or device for reaching the individual through class instruction has evoked more words written or spoken during the past ten years than homogeneous or ability grouping. The possible exception is individualized instruction."¹ Always responsive to the key issues of the day, the National Society for the Study of Education focused a 1936 yearbook on *The Grouping of Pupils*.² By 1950, in an article in the *Encyclopedia of Educational Research*, Otto stated that "no research studies on ability grouping have been reported during the past fifteen years."³ While there actually were some studies in that period, the article accurately reflected the decline in research on grouping. The past decade has been marked by a sharp upswing in grouping proposals and in studies of the effects and effectiveness of grouping. In the 1960 edition of the *Encyclopedia of Educational Research* article on grouping, Goodlad commented that, "Perhaps the most controversial issue of classroom organization in recent years is whether or not students of like ability should be grouped together for instructional purposes."⁴

Homogeneous grouping is defined in the *Dictionary of Education* as "the classifications of pupils for the purpose of forming instructional groups having a relatively high degree of similarity in regard to certain factors that affect learning." Many different schemes fit this definition and a wide variety of programs and practices has emerged, all of which involve some form of classification or selection of students, each aiming to increase either teaching or learning effectiveness. For instance, of the many provisions for individual differences found in the 1932 National Survey of Secondary Education, *homogeneous grouping* and *special classes* were found to be the most popular, and were judged by the

school respondents as the "most successful." Homogeneous grouping in that survey included all efforts to "improve the teaching and learning environment through refined classification of pupils," while special classes encompassed various attempts to provide for extreme deviance in abilities and/or needs by means of such provisions as special coaching for slow or gifted pupils or by opportunity, remedial and adjustment classes.⁵ Harap reported in 1936 that ability grouping was the "most common method of adjusting learning to individual differences."⁶

A United States Office of Education survey of practices and policies of elementary school administration and organization published in 1960 noted that "the methods of grouping and assigning pupils for instructional purposes represent another area of timely interest and one on which there is a great deal of public and professional discussion."⁷ The survey indicated that of the 4,307 urban places with populations of 2,500 or more which participated, in elementary schools, only 16.9 per cent had a basic policy of homogeneous grouping in Grades 1-6; 34.4 per cent grouped homogeneously in Grades 7-8. Interestingly, schools using a policy of heterogeneous grouping and those using homogeneous grouping were in agreement that there would be an increase in homogeneous grouping in the future. In terms of the predicted trend, "those presently grouping heterogeneously show more than a 40 per cent prediction towards homogeneous grouping, whereas about 8 per cent in both grade groups who now group homogeneously suggest a change towards heterogeneous grouping."⁸

II

Although the practice of grouping students reached its peak in the 1920s and 1930s, the origins of grouping go back into the last century. W. T. Harris's plan, initiated in St. Louis in 1867, is often cited as the first attempt at homogeneous grouping. Selected groups of bright students, chosen on achievement as determined by the teachers, were promoted rapidly through the elementary grades. A few years later, Elizabeth, New Jersey, inaugurated a somewhat similar plan with classes of bright pupils formed from each of the elementary grades and moved through

the program as rapidly as possible. The Cambridge, Massachusetts, plan came into operation in 1891 with the pupils divided into groups so that the brightest might complete grades 4-9 in four years, while the slowest took seven or eight. The Santa Barbara Concentric Plan was begun at the turn of the century, with each grade divided into A, B, and C sections, each mastering the same fundamentals for each subject, but the A's doing more extensive work than the B's, and the B's more than the C's. These and other plans—the Newton Plan; the “Double Tillage Plan” of Woburn, Massachusetts; the New Richmond, Wisconsin Plan—are just a few of the dozens of schemes for flexible progress and promotion which were in operation sufficiently long to merit mention in the literature.

However, it was not until 1916 that any serious attempt was made to study homogeneous grouping with something resembling controlled experimentation. Guy M. Whipple studied a gifted class consisting of thirteen boys and seventeen girls, chosen on teacher recommendation from the fifth and sixth grades of an Urbana, Illinois school. Numerous other studies followed soon after, with the number greatest in the late 1920s. By the early 1930s, several good summaries and critical reviews of the research appeared. One of the earliest was a critical analysis of research evidence on ability grouping, made by Rock in 1929. Considering only those studied which he viewed as “scientific,” Rock concluded that:

The experimental studies of grouping which have been considered, fail to show consistent, statistically or educationally significant differences between the achievement of pupils in homogeneous groups and pupils of equal ability in heterogeneous groups. This failure to realize one of the important advantages claimed for ability grouping is not, however, evidence that homogeneous grouping cannot result in increased academic achievement. Neither do the experiments show that other claims made for grouping cannot be attained under proper organization.⁹

Billett reviewed 140 articles, including 108 “experimental or practical studies” which appeared in the literature between 1917-1928. Of the 108 studies, Billett listed 102 as “uncontrolled,” two “partly” controlled, and four as “thoroughly controlled.” Of the 102 “uncontrolled studies,” eighty-eight were favorable to

grouping, ten were doubtful, and four unfavorable. One of the "partly controlled" studies was favorable to grouping, the other doubtful. Two of the four "thoroughly controlled" studies were favorable to grouping, one doubtful, and one unfavorable.¹⁰

Among the trends in the study of homogeneous grouping, Billett found, the general recognition that "so-called homogeneous grouping in practice produces not homogeneity, but reduced heterogeneity."¹¹

From an analysis of research on grouping made in 1931, Turney concluded that most of the studies purporting to evaluate ability grouping have proved nothing regarding grouping but have only added evidence bearing on the nature and extent of individual differences.¹²

Twenty studies were summarized by Miller and Otto in 1930, who criticized the methodology used in the studies and the experimental design. Their conclusions were as follows:

1. While the evidence is contradictory, at least two of the studies suggest that ability grouping is quite ineffective unless accompanied by proper changes in method. Unless adaptation of methods and materials is a necessary correlate to ability grouping, one of the purposes of the project is defeated.

2. So far as achievement is concerned, there is no clear-cut evidence, that homogeneous grouping is either advantageous or disadvantageous. The studies seem to indicate that homogeneous classification may be effective if accompanied by proper adaptation in methods and materials.¹³

In preparation for a large-scale grouping experiment in Australia, Wyndham studied the research and literature dealing with ability grouping in the United States. He concluded that in terms of improvement in scholastic achievements, the evidence is slightly in favor of ability grouping; that no experimental evidence is available which supports the contention that ability grouping produces undesirable attitudes on the part of pupils; and that the question of comparative ease and effectiveness of teaching remains virtually unanswered.¹⁴

Wyndham noted that, "Upon examination, the issues in this field proved to be much further from any kind of settlement than some writers had indicated; from no source could an unequivocal answer be found to any of the problems involved."

Even at that date, Wyndham was able to observe a reaction to the practice of ability grouping—"without waiting for experimental evidence as to the effectiveness or the undesirability."

The National Society for the Study of Education's Thirty-Fifth Yearbook (1936), consisted of a comprehensive discussion of the practical, theoretical, and experimental considerations in grouping of pupils as of that time. Cornell's conclusion was that:

The results of ability grouping seem to depend less upon the fact of grouping itself than upon the philosophy behind the grouping, the accuracy with which grouping is made for the purposes intended, the differentiations in content, method, and speed, and the technique of the teacher, as well as upon more general environmental influences. Experimental studies have in general been too piecemeal to afford a true evaluation of the results, but when attitudes, methods, and curricula are well-adapted to further adjustment of the school to the child, results, both objective and subjective, seem favorable to grouping.¹⁵

A review of the literature on experimental studies of homogeneous grouping by Ruth Ekstrom in 1959 resulted in finding thirteen studies which found differences favoring homogeneous grouping; fifteen which found no differences or which found grouping detrimental; and five studies which gave mixed results. Ekstrom found: no consistent pattern for the effectiveness of homogeneous grouping related to age, ability level, course contents, or method of instruction.¹⁶

III

Looking specifically at the research related to special grouping for the gifted, Miles declared that, "The experimental work with the gifted children in which segregated are compared with nonsegregated groups seems to point to the more favorable progress of the former as compared with the latter. The studies are too few to be completely convincing."¹⁷ Similarly, while noting the lack of unanimity of findings with respect to homogeneous vs. heterogeneous grouping, Passow observed that "comparative studies of gifted students in regular and special classes on all educational levels tends to be more uniform in denoting beneficial effects of the special classes on academic, personal, and social growth."¹⁸

In the most recent edition of the *Encyclopedia of Education Research* (1960), Goodlad observed that studies since the 1930s "have not added to precision of the conclusions or clarification of the problems analyzed by Cornell" in the 1936 N.S.S.E. year-book.

Even as the number of grouping studies have accumulated over the past three decades, the inconclusiveness of the research findings becomes more apparent as each reviewer couches his summary in tentative or equivocal fashion. While it is true, as Ekstrom observed, "the studies differ widely in quality, purpose, and significance,"¹⁹ there are also many other differences which make synthesis of research difficult in this area. The conflicting findings caused Cornell to observe in 1936 that "a review of the objective results of ability grouping leaves one convinced that we have not yet attained any unequivocal experimental results that are capable of wide generalization."²⁰ Two years earlier, Wyndham had noted that "the first general impression one gains from these studies is that, granted their unequal experimental significance, they raise more issues than they settle."²¹

Some of the reasons which may account for the difficulties in generalizing from the research are readily apparent from an examination of the studies themselves. Specifically, the problems of equating and synthesizing research findings stem from the following:

- 1) The studies vary considerably in scope of aim and purpose. Some experiments were relatively circumscribed, dealing with a single grade level; others, the entire elementary or junior high school level. In some instances, the studies were concerned with achievement in a single subject—reading, algebra, Latin, college physics—while other experiments attempted to assess scholastic growth in all content areas at a particular grade level. Some studies simply assessed pupil and teacher opinion. Most experiments were concerned solely with attainments in scholastic subjects. Little or no attention was given in most experiments to assessing the effects of grouping on other aspects of pupil growth—attitudes, interests, or personal development. The arguments pro and con ability grouping generally involve the effects of such practices on personal and social development but the purposes of

most experiments have excluded these behavioral areas and dealt primarily with academic achievement.

2) The studies differ in the number of students, the number of groups, and the size of the classes involved. The total number of subjects and groups was too often far too small to provide any basis for valid generalizations. In some experiments, as few as two or three groups with 25–30 students each were used. Of the twenty studies, Miller and Otto summarized, the total number of pupils, when indicated at all, ranged from eighty to 333. The size of the classes varies considerably even within a single study. For instance, in the Billett studies (1924–1927)—cited by Wyndham as “among the most satisfactory from the point of view of method and form of presentation”—the 116 incoming ninth graders were divided into five groups, ranging in size from thirteen to thirty-nine.²² Comparisons of achievement in groups which were quite disparate in size are highly questionable—differences may well reflect the effects of class size rather than of grouping practices. The size of the sample is not the only consideration, of course, since some of the studies with the largest gross numbers of pupils employed such poor techniques of selection and grouping that the value of the findings is diminished.

3) The studies differ in their duration—ranging from a semester or less to a year or more. The question of length of an experiment is important in assessing how lasting or cumulative the results are. Pointing to the complexity of problems caused by inadequate duration, Wyndham noted that many experiments are begun at the beginning of the year and last for such a short time that

it becomes pertinent to ask whether a teacher is thoroughly *en rapport* with her class during the first term of the school year, whether the children are properly adjusted to the new conditions, and whether the measures of the products of schooling during that time afford an adequate sample of what will be achieved during the year as a whole.²³

This problem of inadequate duration of study is underlined by Ekstrom who notes that “the probable error of the reported test scores is frequently greater than the normal differences in scores for the period of experiment.”

4) The studies differ in the adequacy of the selection bases

and the means of matching experimental and control groups. With few exceptions, general intelligence as measured by group tests is the usual criterion for the selection of groups. Particularly in the earlier studies, pupils were classified into gross categories of dull, average, and bright. Seldom were classes or groups organized on the basis of more than a single variable. As a consequence, groups were only "homogeneous" with respect to one factor and, therefore, subject to the limitations involved in its measurement. The matching of experimental and control groups in many studies has been inadequate since most of the factors which affect individual learning are ignored. Even the description of the composition of groups has been incomplete in some studies. Matching of individuals on the basis of single scores is a doubtful procedure used in some experiments. While some studies speak of paired control groups or matched pairs, the nature of the selection frequently leaves much to be desired even in terms of adequately describing the procedures and the groups which results. Many different bases for selection other than group intelligence test scores have been suggested—teachers' judgments, physical and social age, educational quotient, interest, and even anatomical age—but few studies have employed multiple criteria in selection for grouping.

5) The studies differ in the "treatment"—i.e., the differentiation of curricula and methods of teaching. In some studies, teachers were asked to keep course content and teaching methods essentially the same for all groups; in others enriched materials and increased tempo of instruction were provided the bright groups, while other program modifications were made for the slower pupils. Some of the studies suggest that unless accompanied by curriculum and methodological changes, grouping is ineffective and its prime purpose—to facilitate differentiated instruction is lost. The difficulties in this area lie in the fact that variations in content and method are not controlled and yet they are treated as if they were controlled factors when assessing the effects of grouping. Billett noted that skillful teachers in charge of homogeneous classes differentiated subject matter and class procedures even though they followed essentially the same course of study.

6) The studies differ in the deployment of teachers in

various groups. Sometimes a single teacher worked with both heterogeneous and homogeneous groups; sometimes a teacher worked with only one kind of group and each class had a separate teacher. Usually the teacher factor was completely ignored in the experimental design. Wyndham was convinced that any attempt to equate teachers on the basis of teaching efficiency was doomed to failure and could lead only to the "erection of statistical structures on foundations of shifting sand. The better plan would seem to be to attempt to obtain the best possible teaching situation for each type of class organization."²⁴ Implicit in this proposal is the assumption that the "best possible teaching situation" was probably different for each type of grouping and that the teacher's enthusiasm for working with a particular kind of child or group of children is an important criterion to be considered.

7) The studies differ in the instruments and techniques used in evaluating changes in students. Standardized tests of achievement, either in single subjects or batteries, and teacher grades are the most widely used means of evaluating in grouping studies. Some of the earlier studies noted change in the rates of failure or promotion, but the majority relied on some kind of objective tests to determine whether one kind of grouping was more favorable than another. Although the arguments pro and con grouping frequently refer to such changes as work-study habits, social adjustment, attitudes toward learning, self concepts, and other personal-social behaviors, few efforts have been made to evaluate the effects of grouping on these areas of development. Cornell noted that "many of the alleged desirable or undesirable results are either not susceptible of measurement or are so difficult to measure that an experimental attack has not been made upon them."²⁵ Psychometric advances in the past twenty-five years have extended the areas of assessment of these procedures, but experimentation in grouping has not as yet taken full advantage of these procedures.

8) The studies have generally failed to assess the effects of grouping on teacher and administrators. Facilitation of teaching and classroom management has been claimed as an advantage for ability grouping but few studies have attempted to assess the effects on teachers. Whatever studies have been done, particularly

in the early research, have usually relied on various types of questionnaires to canvass teachers as to their views on grouping. Attitude and opinion surveys have been made by several researchers but no real experimental attack has been made on the question of ease or effectiveness of teaching in various grouping plans.

There are a great many questions still unanswered about the effects of ability grouping. Some more recent grouping plans—ungraded primary units, Dual Progress Plan, University of Chicago's "teachable groups"—are now being studied. These represent approaches to grouping which depart from the more traditional procedures based on a single ability criteria. Little, if any, evidence is available on the effectiveness of any of the newer grouping approaches to date. Research designs which deal with some of these unanswered questions in more comprehensive fashion than has been done in the past may help fill some of the gaps.

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PART II

Ability, Partial Ability, and Homogeneous Grouping Plans

ABILITY GROUPING, or classification of pupils for instructional purposes so that a relatively high degree of homogeneity exists within the group, has had a long and somewhat stormy history. The strong impact made by intelligence tests in the 1920s gave impetus to a popular movement to divide youngsters, at any given grade level, into individual classrooms based on the similarity of IQ score. However, confusion set in rather quickly. The terms *homogeneous groups* and *ability groups* took on synonymous meanings. Frequently, these terms are still used interchangeably.

Homogeneous grouping based on IQ scores alone seems to have passed from the educational scene. Much evidence can be adduced to show that intelligence tests alone are not reliable to the point that solid unchangeable groups can be based on them. Additional evidence can also be presented to show that homogeneous grouping does not always achieve a greater provision for individual differences, nor does it reduce the range of actual accomplishment in each grade. It is generally conceded that grouping students on the basis of one ability reduces the class range to some extent on that ability alone, but that complete heterogeneity in many other areas will still exist.

In addition to the problems of arriving at greater precision in establishing ability or homogeneous groups, the whole question of whether or not this type of grouping "squares" with democratic principles is an issue.

Despite the research, which, for the most part, indicates that homogeneous grouping based on IQ score alone, or reading ability alone, does not in fact yield homogeneity, there still remain vast areas of disagreement among educators. The readings in this section reflect in some measure a paucity of relevant research. Yet, there is now a renewed interest in homogeneous grouping. The question arises as to whether or not, in view of the lack of research, this practice is defensible. However, the summary of arguments, whether empirically established or just plausibly suppositious, are set forth here in the hope that the so-called advantages and disadvantages of ability, partial ability, and homogeneous grouping plans will emerge clearer in the reader's mind as he approaches this section of readings.

The advantages claimed are that:

- Each child is challenged at his own level and therefore has a real chance to succeed.

- Enrichment fails in heterogeneous grouping because the teachers do not have time for the one or two really bright students, but in homogeneous grouping the teacher is able to care more adequately for all individuals since the total range of the class is somewhat reduced.

- Children have an opportunity to successfully compete, academically and socially, and the average and slow students have a chance to become leaders in their own groups.

- It is easier for the teacher to teach successfully since there will be fewer groups within the class for skill subjects, and the groups themselves will be made up of students of nearly equal ability.

- Children naturally make friends with others who have similar intellectual ability.

- In real life situations we do not find the barber competing with the chemist but rather with the other barbers, and, consequently, it seems more true to life to have children compete with those somewhere near their own level.

- Because the teacher has less groups to prepare she does a better job.

The disadvantages claimed are that:

- Dividing children into three groups cuts the range of differences only about by one fifth, and most groups are still far more heterogeneous than teachers and administrators realize.

- Regardless of how homogeneous the group is in the beginning, if the instruction is effective the group becomes more and more heterogeneous.

- There is a tendency to find the higher ability group made up of children from the higher socio-economic level.

- Children in the lower ability class feel stigmatized and are aware that they are considered slow, dull, or dumb.

- Parents resent their child being assigned to a slow group.

- Many teachers dislike working with the slow group and lack the preparation for dealing with the special learning problems they encounter in that group.

- Children in the "smart" group are aware of their distinction and may become self-satisfied and conceited.

- Often there is a lack of data to allow for successfully grouping pupils.

- Uneven growth patterns and uneven social and academic profiles make homogeneous grouping difficult.

- There has been no conclusive evidence through research that ability grouping leads to improved mastery of subject matter.

- When it is school-wide or intraclass, it limits flexibility.

This list of advantages and disadvantages can only take on meaning as one views the studies from which these points of view are derived.

Professor Goldberg's conclusions reported in the lead article of this section indicate that grouping alone is not enough. A closer look at the possibilities inherent in homogeneous grouping is much needed, according to Lawson's perceptive analysis of both the history and philosophy of this type of grouping. Balow clearly offers a demurrer against homogeneous grouping as such. He stands firm with Professor Goldberg on the point that what is done with the group is the important item. Koontz, like

Balow, found that homogeneous grouping failed to achieve its theoretical possibilities as noted in the advantages listed. Mann clearly reiterates what she feels are the disadvantages of ability grouping, and Green and Riley clearly indicate in their research certain significant advantages. Karnes *et al.* find that many values for underachievers are gained by homogeneous grouping.

Ability Grouping in Elementary School

Merely grouping elementary school pupils by ability—without deliberate changes in instructional content—is largely a waste of time, according to a study made by Teachers College, Columbia University, in cooperation with the New York City Board of Education. The study was directed by Prof. Miriam L. Goldberg of the college's Horace Mann-Lincoln Institute of School Experimentation in cooperation with Joseph Justman of the New York City Board of Education and was carried out in forty-five New York City elementary schools. About 2,200 pupils, organized into eighty-six classes and fifteen grouping patterns, were studied through the fifth and sixth grades, from 1956 to 1958. The pupils were divided into five ability levels, with IQs of 181 to seventy-six.

The study showed that the presence of gifted pupils tended to raise the science achievement for all other ability levels and, to some extent, the social studies achievement of bright and high-average pupils. Conversely, the presence of low, or below-average pupils tended to raise the arithmetic attainment for all other pupils. The two extreme groups had little or no effect on achievement in other subjects. Average achievement, across all subjects, was greatest in classes with pupils of four or five ability levels, but no one grouping pattern proved best for all ability levels in all subjects.

The effects of the teacher on the achievement gains of the

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class were more potent than the effects of pupil intelligence, ability range, or relative position. Class-to-class differences were greatest for the gifted pupils and least for the slowest groups.

As measured by pupil achievement, some teachers did well in teaching effectiveness in all subjects and others did poorly, but most teachers achieved far better results in one or two subjects than they did in others. This was particularly true for the gifted group. Most teachers were more successful in teaching one subject to several ability groups, simultaneously, than in teaching all subjects, even in narrow-range classes.

Prof. Goldberg concludes that, on the basis of this study, ability grouping, by itself—that is, the mere physical assembling of pupils with similar ability—did not have any positive effect on the academic attainment of fifth- and sixth-grade pupils. Gains in achievement were influenced more strongly by teacher and group differences, in individual classrooms, than by the presence or absence of gifted pupils, the range of ability in the class, or even by the intellectual ability of the pupils.

Analysis of Historic and Philosophic Considerations for Homogeneous Grouping

Douglas E. Lawson

INTRODUCTION

The entire history of education during the past century reflects many conflicting and confused opinions concerning the application of democratic principle in school operation and administration. Perhaps nowhere have the divergencies been wider nor the cross-currents of ideas more confused and confusing than in the single area relating to grouping, classification, and promotion (or retention) of pupils.

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Into this conflict have been thrown many pertinent and some rather irrelevant questions. Does a pupil fail—or is it the school that fails? Are differences in ability basic or do the faults lie with the environment and poor motivation? Does retention result in better, or poorer, learning in the succeeding year? Is the one-year-at-a-time system of promotion consistent with the facts of variation in growth patterns? Is it democratic to group pupils in accordance with their abilities? Do we have adequate testing devices to justify ability grouping? Can homogeneous grouping be justified even if no two children are identical in ability or learning capacity? Will special promotion cause social or emotional maladjustment of the child? Has our present grade-organization system outlived its usefulness? Are special promotions administratively feasible? Are they democratic? And, finally, if homogeneous grouping is to be attempted, what bases of differentiation will be used?

Various philosophical viewpoints hold that the *summum bonum* lies within an ultimate happiness for man, or that it rests with an ultimate “self-realization” of each child’s spiritual being, or that only continuous growth and adaptation can be sought. In the light of these viewpoints it is important to ask how the various ideologies measure the validity of arguments for or against homogeneous grouping of pupils.

1) *The perennialist-idealist’s stake in homogeneous grouping.* The perennialist-idealist, interested in classical cultural values, is apt to argue that first consideration be given to the “right” curriculum. To say that there is no “right” curriculum for all children is to destroy his faith in mental discipline, the child’s will, and individual responsibility. It is to place in question all fixed educational values. If asked why the school should not differentiate groups of children and correspondingly differentiate curricular requirements to meet their individual needs, he is apt to reply, as did one early school committee, that the distribution of native abilities among children “is made by a higher power than our own, and that it is fruitless to confound the eternal distinctions of things” (1).

Or, disclaiming all responsibility for less capable pupils, he might agree with Nathaniel Thayer, who insisted that it was

necessary "to be rid of those who stand at zero" and who happily predicted that "they will either take a hint from their own averages, and bid us good bye, or they will very quietly, and 'unknown to fame,' pass out at the end of their time . . ." (2).

Since, in the view of the extreme perennialist-idealist, there is a "right" curriculum which alone constitutes an education, his desire is to see that each child masters it at an appropriate age. Homogeneous grouping would deny that the same fixed values exist for all children or that certain curricular content is indispensable to the educated man. The mentally deficient child, perhaps, could be excused from the classical requirements and receive merely a form of training; but for those who would be educated, little of differentiation could be allowed.

Here is where the perennialist-idealist who opposed homogeneous grouping seems inconsistent with his own major aims—self-realization by the child and transmission of the culture. In the first place, he too seldom analyzes the term "self-realization." Basically it can mean nothing more than the child's ultimate development of all those potentials which make him a spiritual, social, or personal "self." It does not mean the development of potentials which the child does not possess. And a democratic philosophy should hold, not that all children have equal potentials (for this is patently absurd in the face of all research data on the subject), but that one child's potentials are as important for his own self-realization as are another child's potentials for his own self-realization. To deny full opportunity to the intellectually subnormal child for his own best development of whatever limited potentials he may possess is to strike at the very root of the real meaning of maximum self-realization. Yet it is the perennialist-idealist who often overlooks this very fact in his insistence upon fixed values in selected curriculum requirements. And, as a specific example, we have seen the child of poor mental ability in the abstract processes not only wasting the school's time and money in studying subjects beyond his intellectual capacity, but losing precious time which he might have devoted to developing those potentials that he could have developed. One sometimes wonders how the perennialist-idealist reconciles this obvious fact with his insistence upon rigidity and regimentation in what he calls the child's proper education.

And, as to the aim of cultural transmission, the traditionalist needs to be asked just who is capable of preserving and transmitting the thoughts of, say, Plato, Epictetus, Kant, Descartes, or Dewey? Surely he does not believe that such a function is for the average mind. The cultural heritage, at its best, is transmitted through good writing and good teaching. And this task is for the relatively few minds capable of interpreting the best from man's past thought. It in no way depends upon the formal education of average pupils. There are other levels of education for them if they are to realize individually their own best potentials. And this means a differentiated curriculum at each level of age and maturity beyond the level of learning the fundamental tools.

The perennialist-idealist, therefore, will best serve his own stated objectives of education by frankly admitting that there are no sacrosanct elements of education: for the only sacred thing in the school is the child.

2) *The pragmatist-experimentalist's stake in homogeneous grouping.* The pragmatic movement sparked what today is called "Progressive" education. The fact that the movement was a much-needed reaction against formalism and decadent traditions attracted all types of those persons, who, for one reason or another, were dissatisfied with the old system. Any reactionary movement is apt to make strange bed-fellows. Sane leaders of the movement soon found themselves surrounded by apostles who talked in strange tongues. Extremists, faddists, and happy seekers of the promised land flocked to the new doctrines. They were determined to clean up education; and some of them, in their own schools, nearly threw out the child with the bath.

Without footnote citations that might today embarrass enthusiastic writers who now may have reconsidered their earlier views, we might remind ourselves of some early pronouncements; to wit: "All activity is learning activity"; "There need be no curriculum"; "The only goal is adjustment"; "Children must never fail"; "The teacher is merely one of the group"; "All learning activity must be pupil-purposed"; etc., etc.

And from these views with their accent upon the child's happy adjustment came the doctrine that homogeneous grouping was the very enemy of the child's self-confidence and his sense of

equality with others. This concept represented a sort of bliss-through-ignorance formula of child "growth." It was never the doctrine of responsible pragmatism but of the fringe-and-ragged-edge group of those who liked the sound of words without analyzing their meanings.

As the more extreme views finally were abandoned or modified, the American school began to show evidence of having acquired new skills in meeting the real needs of diverse groups of children. Motivation had lost much of its earlier brutality; much of the lock-step of earlier regimentation had disappeared; and schools that formerly had been staffed by teachers whose only job was to see that children studied, now hired personnel who had learned how to study the children. And throughout the entire philosophy of the new school there was a growing emphasis upon the democratic method, the individual-social needs that grow out of the child's basic impulses, and the continuity of total organismic development.

It seems surprising that among these new concepts and points of emphasis there should remain a distinct misapplication of the democratic principle. Yet the pragmatist, while emphasizing individuality of the child and properly insisting upon provisions to meet individual interests and needs, nevertheless often stands opposed to homogeneous grouping. He is apt to insist that there can be no such thing as homogeneous grouping anyway, because no two pupils are identical. Furthermore, he looks with suspicion upon standardized tests that purport to define among children the contrasting limits of their learning capacities. As to his first argument, it is enough to point out that the word "homogeneous" does not necessarily imply identity or exact equality of abilities. Both good usage and standard dictionary definitions indicate homogeneity where there is similarity, likeness, uniformity, or commensurability. And the pragmatist, insisting upon differences in interests and strengths of drives, should be among the first to recognize differences in potential learning abilities. Following, as he does, the doctrine of evolution, he should be first to recognize differences in native or absolute capacity, whether such differences are precisely measurable or not, and should welcome the attempt that is made to refine the instruments of measurement.

No one, more than the pragmatist, insists upon the democratic concept in education, its organization and its administration. It would seem that the pragmatist, then, would be attracted to a system which attempts to measure each child's potential and to place him in a group whose progress and capacities are consistent with that potential.

3) *The realist's stake in homogeneous grouping.* More perhaps than anyone else, the realist has recognized the better possibilities of homogeneous grouping. With the exception of those perennialist-realists who place extreme emphasis upon past culture *qua* past culture, there is a tendency to measure curricular values in terms of their functional relations to the needs of the individual in society. The criterion frequently is stated as that of happiness for all human beings. And happiness is seen as being ultimately an individual condition contingent upon the learner's success in finding satisfaction for his basic social drives and achievement at or near his best potential for contributing to the happiness of his fellow beings. He requires recognition, success, acceptance, and a certain sense of security. These satisfactions he can find only when confronted with a learning situation that allows him to achieve comparably with his immediate associates and in line with his own peculiar aptitudes and interests. And these latter elements are measurable within ranges of significant statistical validity by use of standardized testing devices, whose results provide the basis for effective planning and guidance as steps toward intelligent grouping.

HISTORICAL CONSIDERATIONS

The simplest form of grouping is the traditional one which classifies pupils by chronological age, promoting them to a higher grade each year. Under this plan, those who were adjudged to have "failed" in the prescribed work of a course were retained at grade level for another year—in all subjects. The percentage of such failures often was high. For example, between 1850 and 1865 the percentage of students failing the admission examinations for two Philadelphia high schools dropped from 46.6 to 20.0 (3).

In Richmond, Virginia, the percentage of failure in the

seventh grade in 1891 was 32.9 in the white schools and 41.2 in the colored schools.¹

In the Baltimore schools of 1886, twenty-six per cent of the third-grade pupils failed their final examinations.²

In Nashville, Tennessee, in 1889, seventeen per cent of all pupils failed the work for the year.³

Examination of various reports published by the Chicago schools between 1880 and 1885 indicates that approximately thirty-three per cent of all children failed to pass from one grade to the next during that period.

Some early reports show cases of children who had been retained in the first grade for as many as nine consecutive years!

As a reaction against the rigidly uniform requirements of the earlier years, a number of schools established "parallel curricula" at the secondary level; but there appears to be little evidence of any successful attempt to devise ways of effectively guiding children in their choices; and at both the elementary and secondary levels the tradition of fixed standards of performance was largely retained.

Then came the decades from 1890 to 1920, with their unprecedented multiplication of high schools and their enrollments. No longer was secondary education reserved for the mentally gifted. It was for the masses. And the eventual result, greatly influenced by a number of converging influences from other sources, has given us today a school system which tries to serve several ideological masters simultaneously. Primarily, it tries to "provide for individual differences" while avoiding an "undemocratic" classification or grouping of pupils in terms of those differences.

The question of what to do with pupils of below-average ability was further complicated in the 1920s and 1930s by a num-

¹ Letter to the writer from Louis P. Weisiger, Director of Research, citing the twenty-second annual report of the superintendent of the public schools, Richmond, Virginia, for the scholastic year ending July 31, 1891 (p. 33).

² Letter from W. H. Lemmel, Superintendent of Schools, citing the fifty-eighth annual report of the board of commissioners of public schools for the year ending December 31, 1886.

³ Letter from J. E. Nagy, Director of Research and Statistics of the Nashville City Schools, with calculations based upon figures found in the annual report of the superintendent of schools for the year 1888-1889, p. 53.

ber of rather extensive researches which cast serious doubt upon the effectiveness of failing and retaining pupils whose performance fell below expected levels. One of the more careful and complete studies was that of the Long Beach, California, schools during 1927 and 1928. Two equated groups of potential failures were used. These pupils were equated in terms of age, sex, IQ, MA, and CA. The experimental group of seventy-one children in grades 2A to 6B were promoted. The control group of seventy were retained. Achievement batteries were used both in pre-testing and in follow-up testing. It was found that, in general, children of normal ability gained more from trial promotion than from retention. That is, they apparently learned more during the following year, especially if they were in grades above the third (4).

A Philadelphia study of 3,221 pupils in grades five and six showed that the percentage of failure per grade subsequent to grade 1A was lower in every IQ group for those pupils who had *not* been retained in 1A than was the subsequent percentage of failure for those who had repeated grade 1A (5).

These results are merely typical of the findings reported by various investigative groups. A general summary of the pertinent research prior to 1950 appears in the *Encyclopedia of Educational Research* for that year (6). It indicates that, in general, retention does not result in significantly increasing the rate of learning among slow pupils; that it does not build better morale among pupils nor assure mastery of subject matter; that it does not increase grade-achievement averages nor reduce the variations of achievement among individual classes; and that it does not improve the personality adjustment of the retained child (7). Similar findings from studies reported by various investigators who have examined available evidence from the numerous researches in the field indicate generally that, in a majority of cases, retention fails to improve the child's learning and may even cause subsequent learning to deteriorate. Consequently, by about 1930, many schools were seeking for something to take the place of failure for slow-learning children. *Homogeneous grouping* seemed to offer promise of aiding the solution of this problem.

The essential consideration which seems to have been chiefly responsible for initiating the movement to group pupils homo-

neously was the desire to adapt curricular requirements to their capacities, special interests, and rates of learning. Unfortunately, a number of schools attempted such grouping on the sole basis of IQ tests (and sometimes group tests at that!), with no consideration of other factors. In some schools this plan meant nothing more than the putting of high IQ's of a given grade level in one room and the low IQ's in another, both groups being given identical assignments and being taught in the same way by teachers who had no specialized training for work with atypical groups. Such indifferent treatment of the problem was, of course, foredoomed to failure; and everyone, including the school janitor, recognized it for the farce that it was.

"Progressives," seeing how quickly the children themselves distinguished between the "bright" and the "dumbbell" groups, condemned not merely the misuse of intelligence tests, but many of them (as well as parents and the public in general) condemned the tests per se. They saw such tests as instruments designed to destroy the democratic concept of equality among children. A few of them even denied the very existence of the IQ. In addition, it was claimed that *homogeneous grouping* would make snobs and social misfits of the gifted children and would leave them unprepared for life in a world of heterogeneous population. And it was pointed out that children of diverse aptitudes and interests could work together in a single group by building their learning activities around meaningful projects and problems of living rather than following the traditional patterns of textbook study and class recitation. In regard to this latter claim, it should be stated that some schools were highly successful in demonstrating that the old memoriter learning was less than indispensable in some areas. Children of different abilities and potentials, working as a unit, learned to plan democratically together and to carry out many significant projects. By using integrated and fused experience units, they made firsthand studies of community resources; they built—and sold—real homes that were intelligently planned, skillfully decorated, and properly constructed; they studied local ordinances, sanitation conditions, recreational facilities, traffic hazards, and contrasting cultural patterns in their own communities; and they even investigated themselves, their habits, prejudices, and personalities. And all this (where the teaching was

skillful and the guidance intelligent) was done by groups which embraced wide ranges of IQ, special interests, and backgrounds.

For a time it seemed that the new order of teaching, heralded as the "activity movement" and based upon "life needs," had found the answer to the problem of meeting individual needs without resorting to *homogeneous grouping*. Teachers would build learning situations around large problems of sufficient scope to offer expression for every child's creative impulses and an outlet for all talents within the heterogeneous group.

Under skilled teaching and within certain areas of learning, the new theory exercised a wholesome effect; and good schools probably never again will return to an exclusive dependence upon textbooks, recitations, and inflexibly uniform achievement requirements. But the movement itself left some important questions unanswered. Being a reaction against traditionalism, it carried its practices so far to the left as to make a fetish of the activity concept and to neglect proper attention to some rather well established principles of learning. Under its spell, more than one teacher misinterpreted Dewey so completely as to believe that, if learning is an active process, then any active process promotes learning. And the movement threatened to run away with the schools completely until a few critical observers began to call for sober evaluation of some of the things that were being done. See, for example, *Fads and Fallacies in Present-Day Education* (8).

Thus movement and counter-movement, theory and counter-theory, have brought educational changes. But it does not appear that any complete solution has been found for the problem of meeting the individual needs of the mass of children while still preserving the desirable standards of performance for those gifted children whose learning capacities are markedly superior. It is in the hope that a number of educators will give a second look at the much-criticized theory of *homogeneous grouping* that the following viewpoints are presented here.

ESSENTIAL CONSIDERATIONS IN GROUPING

1) Homogeneous grouping is not necessarily undemocratic. Those who abandoned homogeneous grouping on the grounds

that it violated the democratic philosophy seem to have ignored the fact that democracy in education means, or should mean, provision for each child to achieve at his own best level in accordance with his own individual potentials. It is no more "democratic" to consider all children as having equal learning capacities and mental potentials than it would be to insist that all children have feet of the same size and must be given shoes that are exactly alike. It is true, and all major research supports the statement, that children are born with different physiological, emotional, and mental potentials; and, just as it is essential that each child have shoes that fit him, it also is essential that educational requirements be tailored to his capacities. Homogeneous grouping actually is an attempt to recognize each child's democratic right to an education that he can handle, to an education that will help him individually to achieve his own maximum of self-realization, happiness, and effective growth. Homogeneous grouping is the very antithesis of an autocratic regimentation and an imposed uniformity.

Intelligent clinical studies of children show that some need one dietary regimen while others need a different prescription. The same fact is true in educational prescription. No one accuses the medical prescriptionist of being undemocratic! The very heart of democracy in education is in the determination to measure each child's weaknesses and strengths—and to see that the requirements and the opportunities are consistently tailored to his needs. Properly conducted and with adequately skilled guidance, homogeneous grouping is a step in this direction.

2) Homogeneous grouping is not impossible. The term does not imply that children are identical. It implies that they are alike, that their abilities and talents are "commensurable," or that their potentials are highly similar. Under expert testing, interviewing, and try-out, it is possible for a competent staff to group pupils into classes of comparable learning capacity and interests.

Reavis, Pierce, and Stullken (9) have indicated three basic considerations for grouping or classification of pupils: (a) The guiding objective must be the promotion of total good or welfare of the learner. (b) Careful consideration must be given to the over-all efficiency of the school as a whole. (c) Grouping must be tentative and flexible rather than fixed and permanent.

Scientific grouping requires a diagnostic approach to the study of the individual. Such study must determine important facts about the child's (a) apparent mental ability, (b) special aptitudes, (c) basic social drives, (d) physical and emotional maturity, (e) educational age in the various learning areas, (f) health, (g) nervous stability, (h) personal and family history and attitudes, and (i) inter-personal adjustment factors.

3) Intelligent grouping is not necessarily rigid and permanent. Many opponents of homogeneous grouping appear to see it as a system which permanently assigns a child to a specific classification from which there can be no escape. But under intelligent operation it is similar to the familiar plan used by any good teacher of beginning reading. Such a teacher customarily breaks a class into small groups, some of which are more advanced than others. Each group studies the materials which its members have not yet mastered. And when an individual child's progress justifies his being moved to a more advanced group, the teacher quietly shifts him. Thus a given pupil may move several times during the year from one group to another within his class. The sole purpose is that of seeing that each child works at his own best level and devotes his time to those learnings which he has not yet satisfactorily acquired but which careful guidance can enable him to acquire.

On a larger scale, over-all ability grouping attempts to accomplish the same result in each area of study or activity. And the learner may be shifted, say, from a slow group in mathematics to a more advanced group in that subject while remaining perhaps with a slow group in social studies or English. Flexibility is restricted only by the limits of administrative feasibility.

It has been claimed that, once the child is assigned to a slow group, he can have little opportunity to catch up with a faster group because he is out of contact with the things that the faster group has been learning. The fact is that, if he has the learning capacity and the desire to catch up with the advanced group, there need be no obstacle in his path. If both groups are taught by the same teacher, there should be no problem whatsoever, any more than there is in the case of the primary reading groups. And if the two classes are taught by different teachers, only the most remarkable lack of coördination and communica-

tion between the teachers should handicap the child's advancement.

In fact, it often can happen that a capable learner may need to be placed temporarily in a slower group in order to receive remedial attention after a period of illness or absence from some other cause. By remaining in the faster group, he might be permanently handicapped by having missed certain essentials which he now can get by working for a while with the less advanced group. After catching up with the work missed, he again may be ready to enter the faster group.

4) Homogeneous grouping does not maladjust the child. The claim that, by assigning a child to a group less advanced than others, the school causes him to develop inferiority feelings and to become maladjusted in his social relationships and attitudes seems to have little support. Research indicates that, in general, children tend to gravitate toward contacts with other children of similar mental and intellectual levels.

It is difficult to imagine anything more calculated to maladjust a child than to keep him continuously in a group with which he cannot compete. Here he meets constant failure. But if he is in a group of his mental peers, he finds success within that group. Success and the feeling of achievement are relative to the situation and the competitive demands that it creates. (In this regard some pragmatists should take notes from their own textbooks!)

5) Homogeneous grouping can offer each child an optimum challenge for his best abilities. Just as the slow child, unable to compete with his classmates, may become discouraged, so may the gifted child become bored in a heterogeneous group whose range of abilities extends far below his own level. The teacher often feels forced to pace the work to average abilities. It is true, as previously indicated, that in some areas of learning, large experience units may provide differentiated activity to challenge a wide range of learning capacities and interests. But it also is true that even the most imaginative and resourceful teachers find difficulty in planning such activities to cover all desirable learnings for a heterogeneous group. Some subjects require drill more than others; and so do some pupils. Some require more reading. Some require more attention to fundamentals.

The best of well-planned and integrated experience units

still leave out certain areas of learning which simply do not fit into the larger patterns and must be mastered separately. Here is where intensive study, drill, or practice can best be conducted by a teacher who has a group whose abilities are comparable.

Homogeneous grouping, then, makes it possible to challenge each child. A challenge soon loses its motivating force for the pupil who can never meet it with success or for the pupil who finds it too easy. Neither child continues to work at his best level. And not only the child, but society at large, is the ultimate loser. Under these conditions neither child can achieve his own maximum of self-realization. (And even here some perennialist-idealists should consult their own lecture notes.)

Research during recent years indicates a number of factors as being responsible for nonattendance of pupils, one of the more significant being the failure of the school to adapt itself to the needs of children (10).

The child who cannot meet the inflexible standards of uniform requirements becomes a misfit in the school. It may be of significance here to note that the older schools, which failed almost universally to adapt their requirements to the individual differences of children, failed to discover and satisfy the real needs of many pupils who later proved themselves to be highly gifted. Herman H. Horne (11) has listed a number of those who were "misfits" in their early schools. The list includes Charles Darwin, Linnaeus, Napoleon, William Seward, Patrick Henry, Newton, Samuel Johnson, Swift, Wordsworth, Heinrich Heine, George Eliot, Walter Scott, Hegel, Byron, Huxley, Schiller, Lowell, Goldsmith, Wagner, Goethe, H. W. Beecher, W. C. Bryant, Emerson, Pasteur, Thackeray, Shelley, Daniel Webster, John Adams, Gladstone, Coleridge, James Watt, Hume, Herbert Spencer, Ibsen, and others.

One wonders how many of these "misfits" might have been well adjusted to their school environments and learning requirements if, through clinical study of their individual aptitudes and abilities, their real needs and potentials had been discovered and used as a basis for such grouping as would have placed each child among others of more similar abilities and learning capacities.

Perhaps the school today, faced with the desperate need to cultivate the talents of its superior students, should take a second

and very thoughtful look at the possibilities for homogeneous grouping.

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Does Homogeneous Grouping Give Homogeneous Groups?

Irving H. Balow

Homogeneous grouping for reading instruction in the elementary schools is often based on several assumptions. One assumption is that homogeneous groups are secured by classifying pupils on the basis of their scores on achievement tests and by limiting each group to a narrow range in test scores. According to this assumption, once pupils have been placed into such groups individual differences in achievement have been severely limited. Hence the teacher will need to provide only one set of materials and prepare only one lesson to teach the group. In short, the teacher can concentrate on the entire group rather than on individuals in the group.

A second assumption made by many advocates of homogeneous grouping is that increased achievement is an automatic result of homogeneous classes. That is, homogeneous grouping automatically leads to greater gains in reading achievement than heterogeneous classes that have a wide range of reading ability. The grouping itself is assumed to be the significant factor.

The study reported here was concerned with testing these assumptions. More specifically, the study was directed to answer the questions: Are homogeneous groups homogeneous? Do homogeneous groups make greater gains in reading achievement than heterogeneous groups?

In October, the principal of a school in southern California, in consultation with his fifth-grade teachers, decided that homogeneous grouping for reading instruction would result in greater gains for the children and would make the teaching of reading easier for the teachers. It was decided that a comprehensive test of reading achievement should be administered to the four fifth-grade classes and that the composite score would determine which group the child would enter.

In November, Form AM of the Iowa Silent Reading Tests, New Edition, was administered to the ninety-four fifth graders. The median grade equivalent for the children on the total test ranged from 2.0 to 9.0.

The children were divided into four classes on the basis of their grade equivalent. Children in Class A had grade equivalents that ranged from 5.7 to 9.0. Grade equivalents of children in Class B ranged from 4.6 to 5.6, in Class C from 3.6 to 4.6, and in Class D from 2.0 to 3.6.

Table 1 shows the number of children in each homogeneous class, the range in grade equivalent for each class, and the median grade equivalent for each class.

Table 1 suggests that this organization resulted in more homogeneous classes. Under heterogeneous grouping each class would have had a range of seven years (2.0 to 9.0) in reading

TABLE 1
Median and Range in Grade Equivalent in Reading for
Four Fifth-Grade Classes after Homogeneous Grouping

	Class A	Class B	Class C	Class D
Number of pupils	21	29	26	18
Range	5.7-9.0	4.6-5.6	3.6-4.6	2.0-3.6
Median	6.7	5.2	4.0	3.3

ability. Under homogeneous grouping, two classes had a range of one year; another, a range of one and a half years; and the last, three and a third years. But such data reveal only a small part of the picture.

The Iowa Silent Reading Tests consist of eight subtests that measure rate, comprehension, directed reading, word meaning, paragraph comprehension, sentence meaning, alphabetizing, and use of index. Table 2 shows the range in each homogeneous class for each subtest.

As Table 2 shows, on any one subtest there was a tremendous overlap in scores from one homogeneous class to another. In fact, on most of the subtests classes B, C, and D have grade equivalents from second-grade level to sixth-grade level.

In Class A, the "above grade level" class, the smallest range

TABLE 2

Range in Grade Equivalent in Reading for Four Homogeneous
Fifth-Grade Classes That Took the Eight Subtests of the
Iowa Silent Reading Tests

Subtest	Class A	Class B	Class C	Class D
Rate	2.1-12.7	1.8-12.7	1.8-12.7	1.8-7.4
Comprehension	3.8-11.1	2.5-11.1	2.0- 6.5	2.0-6.0
Directed reading	2.5-11.8	1.8- 7.0	1.8- 5.7	1.8-5.2
Word meaning	4.5- 8.5	2.9- 7.9	1.9- 6.1	1.9-3.8
Paragraph comprehension	3.7-10.2	1.9- 9.4	1.9- 8.6	1.9-5.6
Sentence meaning	4.4-10.3	2.9- 8.4	1.9- 7.5	1.9-9.5
Alphabetizing	3.1-12.4	3.1- 8.1	3.1- 9.8	3.1-5.9
Use of index	4.7-11.3	1.9- 8.0	1.9- 6.5	1.9-6.0

(four years) is on word meaning and the greatest range (ten years and six months) on the rate test. On rate, the children in this class ranged from more than three years below grade level to almost seven and a half years above grade level. On the word meaning test, the scores in Class A ranged from more than a half year below grade level to more than three years above grade level. On each of the eight subtests, some children in Class A scored below grade level.

In Class B, the smallest range in grade equivalent was five years, and this range was found in the alphabetizing tests; in each test the scores ranged from almost two years below grade level to more than three years above grade level. The greatest range was on the rate and the comprehension tests. On the rate test, children ranged from more than three years below grade level to almost seven and a half years above grade level. On the comprehension test, scores ranged from more than two and a half years below grade level to almost six years above grade level.

Classes C and D had more restricted ranges, but the scores in each class were so divergent that only by stretching the term could any of these classes be considered homogeneous with respect to any of the subtests.

Table 2 presents evidence that groups designated as homogeneous in reading ability may in fact be extremely heterogeneous. Classification on the basis of standardized test scores does not necessarily result in homogeneous groups.

The second assumption tested in this study is that once the pupils have been grouped, the problem of teaching reading is solved and greater gains in reading achievement will result.

To test this assumption, the sixth-grade classes in three other schools in this community in southern California were tested. One school was using homogeneous grouping for reading instruction for the second year. The experience of the previous year had been evaluated informally, and the teachers were convinced that the children had made greater gains in reading as a result of homogeneous grouping. The sixth grades that served as the control group were selected because no special grouping methods had been used in these schools. Each sixth-grade teacher had a random selection of the sixth-grade children in the school.

In October, Form B, Intermediate Battery—Complete, of the Metropolitan Achievement Tests, was administered to all the children in the two groups. The results of this test were immediately given to the teachers of the experimental group so the scores could be used for grouping.

In the school that used homogeneous grouping three groups were organized. The pupils whose scores were above grade level went to one teacher for an hour each day for reading instruction. Pupils whose scores in reading were average went to the second sixth-grade teacher. Pupils whose scores in reading were below average went to the third sixth-grade teacher.

In January, the California Short-Form Test of Mental Maturity was administered to all children in the two groups, and the intelligence quotients were secured. In June, Form A, Intermediate Battery—Complete, of the Metropolitan Achievement Tests, was administered.

The average intelligence quotient for the homogeneously grouped classes was 103.5 and for the control classes, 103.9. The variance of the intelligence quotients of the two groups was tested, and no statistically significant difference was found. A *t* test of the difference between means resulted in a *t* value of .175, which has a probability greater than .80 with 164 degrees of freedom. These findings strengthened our assumption that the two groups of pupils were of equal intelligence at the beginning of the experiment.

The variances of the reading test scores at the beginning of

the experiment were tested and found to be statistically equal for the two groups. The mean raw score of the homogeneous group was 23.80 and of the control group, 20.97, a difference of 2.83 points. When this mean difference was tested by using the *t* test, a *t* value of 2.64 was found, a value which is significant at the 1 per cent level of probability. The hypothesis that the two groups were equal in reading abilities at the beginning of the experiment was therefore rejected. At the start of the study, the reading achievement of the homogeneous group was significantly higher than the reading achievement of the control group.

Growth in reading from October to June was determined by subtracting the October score from the June score for each child in the study. The difference was the gain as measured by the Metropolitan Achievement Tests—Reading. The mean gain for the children in the homogeneous groups was 5.078 points and for the children in the heterogeneous groups, 5.157 points. The variances of the growth scores for the two groups were tested and found to be statistically equal. The mean difference was tested using the *t* test and a *t* value of .10 was found. The probability of a *t* value of .10 with 164 degrees of freedom is greater than .90. Consequently, the hypothesis of no difference in growth between the two groups was accepted.

The first assumption, that a homogeneous group may be secured by classifying children according to a reading test score, would seem to be untenable. The evidence presented here tends, instead, to substantiate the belief that reading growth, in all its aspects, varies with each child. Reading ability is made up of many skills. The child in the fifth-grade who secures a grade equivalent of 4.5 on a reading test may be scoring below grade level because he is poor in word analysis. He may use context clues well, have high intelligence, and answer all questions on the test. Another child with the same score may be very good at word analysis, but he may not comprehend well, and he may read too slowly to complete the test. These two children cannot be considered equal in reading skills even though they received the same score in reading. If test results are used as the basis for grouping, however, these two children would be placed in the same homogeneous class.

The second assumption, that greater gains in achievement

will necessarily result from homogeneous grouping, was also rejected by the evidence presented in this study. The difference in mean growth scores was in favor of the control group, not the homogeneous groups, though the difference was not significant. The results show, however, that in this study the homogeneous grouping did not lead to greater measured gains.

There may be advantages which accrue to classes that are homogeneously grouped for reading instruction, but these advantages are not automatic. Procedures more sophisticated than achievement testing are required to secure a reasonably homogeneous class. But homogeneity is not enough. Once homogeneity is secured, to justify the grouping, a program must be devised that will result in greater reading growth.

A Study of Achievement as a Function of Homogeneous Grouping

William F. Koontz

For many years, our public schools have recognized that pupils have a wide range of abilities, interests, and degrees of motivation. In order to provide for these individual differences, many schools have grouped their classes homogeneously.

Early attempts at class grouping were executed with no empirical proof of its efficacy; and even today, there is inconclusive evidence as to the instructional value of homogeneous grouping.

Approximately 25 years ago, it was reported that the literature related to homogeneous grouping had been carefully reviewed, and the most significant conclusion from it all was how little it had "brought of clearly incontestable knowledge" (3). Professor Passow, in 1956, stated that there was no "significant

unanimity of findings" in this area (2). One critical evaluation and synthesis of the research indicated that the evidence slightly favored homogeneous grouping where adaptation of teaching methods had accompanied it. But there is inadequate evidence as to the proper adaptations (1).

PURPOSE AND PROCEDURE

The purpose of this study was to test the null hypothesis that children grouped homogeneously by subject matter achievement, and who were given instructional materials on their achievement level, would show no greater achievement as a result than pupils who were grouped heterogeneously and followed a regular course of study.

During the 1959-1960 school session, pupils in five fourth-grade classes at Deep Creek Elementary School participated in the study as experimental subjects. Control subjects were selected from the fourth grades of two other Norfolk County Schools.

At the close of the third grade, experimental and control pupils were given the Iowa Tests of Basic Skills. Grouping of experimental classes for fourth-grade study was effected through the use of scores from this test. Homogeneous groups were formed in three areas: arithmetic, language, and reading. All experimental pupils were listed in rank order in terms of their grade equivalent scores. The members of a class were chosen then by selecting the top 20 percent, the second 20 percent, and so on. Pupils were placed in arithmetic class on the basis of their arithmetic scores, in language class on the basis of their language scores, and in reading class on the basis of their reading scores. Some pupils who were in the highest reading class were only average in arithmetic; therefore, they would be in a lower arithmetic class. As a result, it was necessary for these pupils to change classes for study in the three areas mentioned. For study in areas other than arithmetic, language, and reading, the groups remained intact and did not change classes.

At the beginning of the fourth grade, it was found that one experimental class, on the average, was achieving at the fifth-grade level; therefore, fifth-grade materials were provided. Two classes were given fourth-grade materials and two classes were

given third-grade materials because of their levels of achievement.

Control pupils were matched with experimental pupils in each of the three areas. The comparability of these two groups in terms of achievement at the beginning of the experiment may be seen from an inspection of Tables I, II, and III.

TABLE I
Beginning Mean Grade Equivalents—Arithmetic

	Grade Equiva- lent Range	Experi- mental Mean	Control Mean
Level 1	4.6-5.4	4.96	5.00
Level 2	4.2-4.6	4.43	4.39
Level 3	3.6-4.2	3.93	3.93
Level 4	2.3-3.6	3.10	3.16
Total	2.3-5.4	4.11	4.12

TABLE II
Beginning Mean Grade Equivalents—Language

	Grade Equiva- lent Range	Experi- mental Mean	Control-Mean
Level 1	4.5-7.0	5.15	5.15
Level 2	3.9-4.5	4.21	4.20
Level 3	3.5-3.9	3.69	3.70
Level 4	1.8-3.3	3.00	3.04
Total	1.8-7.0	4.01	4.02

Schools in which control pupils were enrolled had no knowledge that the experiment was being conducted. Control pupils were grouped heterogeneously, and all of them followed the usual course of study with fourth-grade materials being provided.

Achievement of the experimental and control groups was measured at the close of the fourth grade with the Iowa Tests of Basic Skills.

ANALYSIS OF RESULTS

The analysis of data was accomplished by a treatment by levels analysis of variance design. By constituting different levels in the analysis, it was possible to determine if any interaction

TABLE III
Beginning Mean Grade Equivalents—Reading

	Grade Equiva- lent Range	Experi- mental Mean	Control Mean
Level 1	4.6-6.9	5.53	5.52
Level 2	3.8-4.6	4.20	4.19
Level 3	3.2-3.8	3.50	3.52
Level 4	2.3-3.2	2.89	2.89
Total	2.3-6.9	4.03	4.03

were present. Or, in other words, did the experimental treatment produce an effect at one level of achievement but not at the others? To illustrate further, perhaps the experimental treatment had a positive effect on the low and high achievers but not on the average achievers.

Table IV . . . shows the final mean grade equivalents achieved by the experimental and control groups in reading.

It is apparent from Table IV that the control group's final reading achievement was higher than that of the experimental group. Over all, there was a difference in achievement of approximately four months between the two groups. Also, the difference was in favor of the control group at all levels. The question to be answered is whether the differences between the groups are statistically significant. The data in Table V . . . presents in summary form the analysis of variance which answers this question.

"A" in Table V represents the treatment groups, i.e., experimental and control, and the variance for A was significant at the .01 level. This suggests the probability is only one in a

TABLE IV
Final Mean Reading Grade Equivalents

	N per Cell	Experimental Mean	Control Mean	Difference be- tween Means
Level 1	27	6.17	6.36	.19
Level 2	27	5.28	5.75	.47
Level 3	27	4.57	4.95	.38
Level 4	27	3.94	4.57	.63
Total	108	4.99	5.41	.42

TABLE V
Summary Table—Reading

Source	df	SS	MS	F
A	1	9.54	9.54	10.36*
L	3	124.97	41.65	45.27*
AL	3	1.41	.47	.51
w cells	208	191.64	.92	
Total	215	327.56		

* Significant at the .01 level of confidence.

hundred that the total difference between these two groups is due to chance.

"L" represents the level of achievement. The information in Table V indicates that there was a significant difference between the means (which includes both the experimental and the control scores) of the levels. It is to be expected that the variance would be significant here.

"AL" denotes the treatment by level interaction. The variance for this category is not significant. Therefore, we must accept the hypothesis that no interaction is present. This is to say that the two treatments did not have significantly different effects at the different levels of achievement. In other words, the groups reacted essentially the same at each level.

Table VI presents the final mean grade equivalents for arithmetic. Higher arithmetic achievement was made by the control group at all levels, as revealed in this Table. Overall, there were approximately three months' difference in favor of the control group. The information in Table VII is a summary of the analysis of variance for these data.

TABLE VI
Final Mean Arithmetic Grade Equivalents

	N per Cell	Experimental Mean	Control Mean	Difference be- tween Means
Level 1	24	5.66	5.95	.29
Level 2	24	5.29	5.40	.11
Level 3	24	4.95	5.24	.29
Level 4	24	4.02	4.50	.48
Total	96	4.98	5.27	.29

TABLE VII
Summary Table—Arithmetic

Source	df	SS	MS	F
A	1	4.14	4.14	11.18*
L	3	60.94	20.31	54.89*
AL	3	.82	.27	.72
w cells	184	67.82	.37	
Total	191	133.72		

* Significant at the .01 level of confidence.

"A" in Table VII represents the treatment groups and the variance here is significant at the .01 level of confidence. Again, this indicates that there is only one possibility in a hundred that the total mean difference between the two groups could be due to chance.

"AL" represents the treatment by levels. The variance for this category is not significant. Again, this suggests that there was no significant difference in the way the groups reacted at the different levels.

Table VIII shows the final mean achievement in language. The control group's total mean grade equivalent exceeded that of the experimental group by approximately one month. At Level 1, the experimental group's mean was roughly one month higher than that of the control. Table IX presents the analysis of variance of these data.

The variance for A in Table IX indicates that the total difference between the two groups was not statistically significant. The AL variance is also non-significant. Therefore, we may con-

TABLE VIII
Final Mean Language Grade Equivalents

	N per Cell	Experimental		Difference between Means
		Mean	Control Mean	
Level 1	29	6.79	6.67	.12
Level 2	29	5.49	5.65	.16
Level 3	29	4.90	5.23	.33
Level 4	29	4.36	4.48	.12
Total	116	5.39	5.51	.12

TABLE IX
Summary Table—Language

Source	df	SS	MS	F
A	1	.84	.84	1.00
L	3	166.18	55.39	65.94*
AL	3	1.53	.51	.60
w cells	224	188.71	.84	
Total	231	357.26		

* Significant at the .01 level of confidence.

clude that there were no real differences in the language achievement of the two groups.

SUMMARY AND CONCLUSIONS

The purpose of this experiment was to test the null hypothesis that fourth-grade pupils grouped homogeneously by subject matter achievement, and who were given materials and instruction on their achievement level, would show no greater achievement than pupils who were grouped heterogeneously and who used only fourth-grade materials. On the basis of the evidence gathered in this study, this hypothesis cannot be rejected. Here, too, as in many other studies, homogeneous grouping failed to realize its theoretical possibilities.

Experimental and control pupils were closely matched in terms of achievement at the beginning of the experiment. However, it may be that many variables that need to be controlled in experimentation with human behavior evaded control in this study.

The theoretical possibility still exists that educational experiences can be made more pointed and more meaningful when teachers can plan them for a class with a narrower range of differences; but in order to resolve this question, further experimental evidence is necessary.

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What Does Ability Grouping Do to the Self Concept?

Maxine Mann

"I am in the low fift Grade I am to dom."

"I happened to be a little smarter than the rest."

These quotations are from answers given by two fifth-grade pupils when asked, "How do you happen to be in this fifth-grade group?"

Do these self-reports give any indication of ways in which these children see themselves? Does the fact that these children have spent most of their five school years under ability grouping have anything to do with the self-concepts—"myself as I see me"¹—that they are reflecting?

RECURRING INTEREST IN ABILITY GROUPING

During the twenties and thirties the literature contained many references to homogeneous or ability grouping. In the following years interest in the subject seemed to decrease. Per-

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¹ J. Murray Lee and Dorris M. Lee, *The Child and His Development* (New York: Appleton-Century-Crofts, Inc., 1958), p. 26.

haps it was felt that the problem had been satisfactorily solved. In the two years since the first Sputnik, with the subsequent re-evaluation of American education, the grouping question has been raised again. It is repeatedly suggested that perhaps ability grouping might be the answer to the problem of improving our educational program. The philosophy involved in ability grouping is not without some merit. It is one attempt to meet the problem of individual differences. However, the emphasis seems to be primarily on differences in potential for academic achievement. Seldom is the question raised as to possible emotional impact on the child in this type of school organization. One finds such comments as, "Teachers observed that the . . . groups were exceedingly happy." This might indicate some subjective evaluation, but there is no evidence of objective data to support such observations.

Is ability grouping good in the way children look at themselves? Is it good in the way teachers look at children? Combs refers to Raimy's original definition of the self-concept in 1943 as, "the more or less organized perceptual object resulting from present and past self observation . . . (it is) what a person believes about himself."² Combs then goes on to say, ". . . the individual himself infers from his experiences who he is and what he is. He perceives of himself as . . . liked or unliked, acceptable or unacceptable, able or unable, depending upon his experiences with the world about him, but most particularly from how people who inhabit that world treat him. All these perceptions contribute to his perception of himself, to his phenomenal self."³

Combs and Soper point out the confusion in terminology that has arisen around this comparatively new theory, the self-concept. One such case is the error of using "self-concept" and "self-report" synonymously. The term, "self-report"—what the individual says he is—is not a synonym for "self-concept" but may be valuable as a means of exploring the self-concept.⁴

² Arthur W. Combs and Donald Snygg, *Individual Behavior* (New York: Harper & Bros., 1959), p. 127.

³ *Ibid.*, p. 128.

⁴ Arthur W. Combs and Daniel Soper, "The Self, Its Derivative Terms, and Research," *Journal of Individual Psychology*, XII (November, 1957), pp. 137-8.

DESCRIPTION OF GROUP

In a limited study among a group of 102 fifth-grade children, this writer attempted to obtain some self-reports which might offer clues to self-concepts. These children were classified into four ability groups upon entrance to first grade. Grouping at that time was based upon results of group intelligence tests and reading readiness tests. Labeled only by the teachers' names, groups are referred to in informal teacher conversations as "the highest group," "the lowest group," "second high," "second low." For the purposes of this study they will be referred to as Sections One, Two, Three and Four in descending order of estimated ability. Thirty children responded in Section One, twenty-nine in Section Two, twenty-five in Section Three, and eighteen in Section Four.

METHOD OF THIS STUDY

A group questionnaire adapted from a study made by Keliher was used to obtain information as to how children see themselves in ability grouping.⁵ The children were told that the writer was making a study to find out what children were thinking and that their teacher had said she believed they would be willing to help. They readily agreed. Blank sheets of paper were then distributed. When children asked whether they should write their names on the papers, they were told that it would not be necessary. It was suggested that perhaps it would be easier to write exactly what they thought if they did not. Some children expressed relief while others insisted upon identifying their papers.

The following directions were given with sufficient time between questions for the children to think and write as fully as they wished.

Please write a number One at the top of your paper. After the number One write the grade you are in. Now write a number Two under the number One and tell me *which* fifth grade you are in. Now write a number Three and tell me how you happen to be in *this* particular fifth-grade group rather than some other group. Now put a number Four on your paper and answer this question with just a "yes" or "no." Is your very, very best friend

⁵ Alice V. Keliher, *A Critical Study of Homogeneous Grouping* (New York: Teachers College, Columbia University, 1931), p. 109.

in this room? Now write a number Five on your paper and answer this question with just a number. How many years have you gone to this school?

The first, fourth and fifth questions were blinds to allay any suspicion on the part of the children, while the second and third were designed to obtain the information.

DISCUSSION OF DATA

Since the groups are officially labeled by teachers' names, one might expect the children to identify them in this manner. About one-third of Section One did make this identification, but almost two-thirds of this group used such terms as "high fifth," "high," "best," "top fifth." Only three children in Section Two and six in Section Three used such identifications as "second highest," "second high," "second to the highest," "C room," "third fifth grade." In Section Four, as in Section One, two-thirds of the group used terms such as "low fifth grade," "low," "lower," rather than the teacher's name. Ways in which children identified their groups are presented in Table 1.

TABLE 1
Ways in Which Children Identified Their Groups

Identification of Group	Section				Total
	1	2	3	4	
By ability placement	19	3	6	12	40
By teacher's name	11	26	17	5	59
By other means	0	0	2	1	3

While only forty of the entire sample identified their groups in terms of ability placement, over two-thirds of Section One and Four responded in this manner. What experiences have brought about such clear identification in *these* sections? Since they are not with other groups for comparison, could this be a reflection of teacher attitudes which have been ingrained in children?

The reasons these children gave for their placement help to bring their self pictures into even clearer focus. Such responses as "I'm smart," "We're smarter," "I'm too dumb," "We don't

know very much," account for half the answers to the third question. The reasons the children gave for their placement are presented in Table 2.

In Section One twenty-five children gave positive responses in terms of ability or achievement—twenty-one of them in positive "I" terms. There were no negative responses from this group. In the next lower section, Section Two, there were only seven responses in terms of ability or achievement and in Section Three only five. In Section Four, the lowest, the fourteen responding in terms of ability or achievement gave negative responses—six in "I" terms, seven in "we" terms. It is interesting

TABLE 2
Children Reflect "Smartness" and "Dumbness" as Reasons for Placement

Reasons Given by Children	Section				Total
	1	2	3	4	
1) "I do not know."	...	14	12	...	26
2) "My name was on the list." "They put me here." "I passed."	5	6	6	...	17
3) <i>In positive terms of ability or achievement:</i> "I" responses: "I'm smart." "I was good in something."					
"I worked hard." "I made good grades."	21	1	2	...	24
"We" responses: "We're smarter."					
"We all know about the same things."					
"We can work a little faster."	3	3	...	...	6
"This is the best fifth grade."	1	...	...	...	1
"This room works as fast as I can."	...	3	...	...	3
4) <i>In negative terms of ability or achievement:</i> "I" responses: "I am too dumb."					
"I am not so smart." "I can't think good."					
"I was not doing very good last year."	...	...	2	6	8
"We" responses: "We aren't smart."					
"We don't know very much."					
"Most of us are lazy."	...	...	1	7	8
"Low book."	...	...	...	1	1
5) <i>In somewhat neutral terms of ability or achievement:</i> "I was in this level for fifth grade."	...	1	...	...	1
"I work the best I can."	...	...	1	...	1
"As well as we work we get in this grade."	...	...	1	...	1
"What kind of grades you made."	...	1	...	...	1
6) Other reasons	...	...	...	4	4
Total	30	29	25	18	102

to note that there are no negative responses in Sections One and Two, few in Section Three, and *only* negative responses in Section Four.

Again one may ask, "What are the experiences which have contributed to the way the children in the 'top' and 'bottom' groups see themselves? Could teacher rejection of the low group and acceptance of the high group help to account for it?" There is administrative recognition of these attitudes in the practice of giving a teacher a high group after she has had a low group for a year.

Before we grasp the straw of ability grouping as the answer to instructional problems brought about by individual differences in academic potentiality, we need to re-examine what has already been done with ability grouping. Because of the negative attitudes such as those revealed by the "low" group in this study, ability grouping was abandoned in the thirties. Are we going to repeat the same mistakes in the sixties?

RECOMMENDED READING

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Interclass Grouping for Reading Instruction in the Middle Grades

Donald Ross Green and Hazel Walker Riley

The Joplin plan (2) is an administrative device for reducing the heterogeneity in reading skill of a group during instruction in reading. A reading period is set aside for pupils in, say, grades

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4, 5, and 6, during which these students leave their regular classes and join others in these grades whose reading level is approximately comparable to their own. Thus greater homogeneity in reading skill is attained in each group than is generally found within class groupings. Presumably greater diversity in all other areas also results. Since the regular classroom teacher still provides at least some instruction in reading, most pupils receive instruction from two teachers.

Some years ago Russell (5) reported that the procedure known as "circling" in the San Francisco City Schools did not appear to be particularly effective. Circling is apparently the same as the Joplin plan. Recently a study apparently contradicting Russell's findings has been published by Morgan and Stucker (4).

In the Russell study the subjects in the experimental (circling) group were from one set of schools and the control subjects were from another set of schools considered comparable to the first set. The grade scores in reading of both groups increased about 1.9 in two years (end of grade 4 to end of grade 6).

Morgan and Stucker dealt with the 5th and 6th grades of a single rural school. In each grade a "fast" and a "slow" control class was set up. The experimental and control subjects did not differ in mean IQ, and the pupils were matched on two measures of reading. Retests a year later found the experimental groups scoring substantially higher than the control groups on both tests.

The present study offers data relevant to the questions one might raise because of the differences between the two studies in procedures and outcomes.

SUBJECTS AND PROCEDURES

Starting in 1957 a number of schools in Atlanta decided to give the Joplin plan a try. The faculty of each school made the decision independently and implemented it in their own fashion. Four of these schools (hereafter Schools A, B, C, and D) believed to serve a representative cross section of the white population of the city¹ were selected for study. The experimental procedures followed in each school will be described below.

¹ The elementary schools are still segregated.

For various reasons complete data for all the grades considered could not be obtained from all four schools. School A was able to supply data for grades 4 and 6 but not for grade 5; for Schools B and D, 6th-grade data were incomplete but adequate information about grades 4 and 5 were obtained; only the 4th grade of School C could be included.

Control group data were obtained from the records of pupils in these schools and grades for the year prior to the inauguration of the experimental program. Schools A and B first tried the plan in 1958-59. Schools C and D began the preceding year. The experimental group subjects were drawn from those pupils in the appropriate grades in 1958-59. Thus the procedure was new to all teachers and pupils in Schools A and B; it was also new to the 4th-grade pupils but not to the 5th-grade pupils and not to the teachers in School D. Both pupils and teachers in School C had had a year's experience with interclass grouping.

Subjects were matched by school, grade, sex, IQ, and parental occupation. The intelligence test was the Kuhlmann-Anderson, Sixth Edition, Form D, administered at the end of the 3rd grade or the beginning of the 4th grade and, in some cases, again at the end of the 5th grade. Where two scores were available an average was used. The categories used by Warner, Meeker, and Eells (6) were used to rate parental occupation. Because of incomplete records, there were fewer subjects for whom complete data were available among the control groups in each school than among the experimental classes. Each control subject was matched with an experimental subject; then a random sample of 15 male pairs and 15 female pairs was drawn from these pairs in each grade in each school. Mean IQ's of the subject and median ratings of parental occupation are shown in Table I.

The potential control subjects for whom complete data were not available tended to fall among those with the lower intelligence test scores. Consequently the mean IQ's reported, especially those for School D, are a bit higher than would be representative of the entire school.

The reading scores reported are grade scores (average of two subtests) from the Stanford Achievement Test, 1953 Edition, administered to each group in September or October and again in May using a different form. The Elementary Battery was used with grade 4 subjects and the Intermediate Battery with 5th- and

6th-grade subjects. The mean initial (September) scores for each group are indicated in Table I. No attempt was made to control initial reading scores; the only "significant" differences between the experimental and control groups occurred in the 4th grade at Schools A and C as noted in Table I.

Since each school proceeded independently, the experimental procedure of each will be described.

School A: Each student in the 4th and 5th grades was assigned to one of eight reading groups solely on the basis of his score on the September reading test. The 6th- and 7th-grade students were also divided into eight groups in the same manner. These special reading classes met from 9:15 to 10:00 three times a week throughout the year. The regular classes were kept as heterogeneous as possible within each grade both years. The 16 teachers in the four grades concerned were the same both years.

School B: The students in grades 4, 5, and 6 were divided into ten reading groups. Assignment was based on Stanford Achievement Test reading scores, IQ, teacher judgment, an informal individual inventory and, in some cases, an oral reading test. The testing and group assignments were the responsibility of the school's special reading teacher, who taught an eleventh group of "special problems." In the assignment to groups no child was placed in a group whose level differed from his own actual grade placement by more than two years. Reading classes met daily for 45 minutes. Assignment to regular classes was not based on ability for either the experimental or control groups. The 4th- and 5th-grade experimental students had the same teachers the control pupils had had.

School C.: The program was begun with the 3rd and 4th grades in the Fall of 1957 (the year prior to the time the experimental subjects were tested). In 1958-59, 4th-grade enrollment dropped from 65 to 41, so that there was only one instead of two 4th-grade classes. Pupils in grades 3, 4, and 5 were assigned to one of four reading groups on the basis of Stanford and Durrell-Sullivan reading scores and IQ. The fourth and slowest group was taught by the principal. Reading classes met daily for 50 minutes.

TABLE I

Mean IQ, Median Occupational Status of Parents, and Mean Initial Reading Score of the Samples

Grade and School	Intelligence Quotient			Parental Occupation			Initial Reading Score					
	Experimental		Control	Experimental		Control	Experimental		Control			
	Mean	S.D.	Mean	S.D.	Md	Range	Md	Range	Mean	S.D.	Mean	S.D.
4A	111.2	7.8	111.4	7.7	2.2	1-4	2.2	1-4	4.62	0.53	5.43 ^a	1.20
4B	102.8	10.9	103.4	10.6	4.1	3-6	4.1	3-6	4.25	1.39	4.43	1.28
4C	92.9	12.1	93.1	12.1	5.0	4-6	5.0	4-6	3.56 ^b	1.06	3.16	0.78
4D	91.7	10.2	91.8	10.3	6.0	5-7	6.0	5-7	2.96	0.79	3.15	0.81
4 Total	99.7	13.1	100.0	13.1	4.5	1-7	4.5	1-7	3.85	1.18	4.04	1.41
5B	103.5	9.9	103.5	10.8	4.3	3-5	4.3	3-5	5.34	1.22	5.53	1.39
5D	94.4	10.4	95.0	10.6	5.7	3-7	5.6	4-7	3.74	0.75	3.95	1.10
5 Total	99.0	11.1	99.2	11.5	5.0	3-7	5.0	3-7	4.54	1.29	4.74	1.48
6A	111.4	7.5	111.5	7.4	2.0	1-4	2.0	1-4	7.17	1.25	7.19	1.44

^a $t = 3.19, P < .01$ ^b $t = 2.21, P < .05$

Regular classes in both years (1956-57 and 1958-59) were entirely heterogeneous within grades. The faculty was reduced in size but not otherwise changed from 1956-57 to 1958-59.

School D: During the year 1958-59 the students in grades 3 through 7 were divided into eight reading groups on the basis of Stanford Achievement Test reading scores. These reading groups met for 45 minutes daily. The plan had been used for three months the previous Spring. Within each grade class assignment has always been made without regard to ability. Unlike the other schools, the teachers in the 4th and 5th grades in 1956-57 had all been replaced by 1958-59.

In all four schools the teacher attempted to use materials appropriate to the reading level of the students in his section. Each school also shifted students from group to group whenever such changes seemed appropriate.

RESULTS

That the experimental groups improved more than the control groups can be seen in Table II. Only the difference between the School D 5th-grade groups failed to be large enough to meet the customary standards of reliability. The gains reported may be compared to an expected gain of roughly 0.7 or 0.8 for groups of average age and intelligence. Thus the control groups gained on the average a bit less than expected, and the experimental groups somewhat more than expected. The differences are quite similar to those reported by Morgan and Stucker.

The differences between gains in each grade of each school have been shown to be large enough to be detected using groups about the size of a typical class. An analysis of variance (not shown) of the 4th-grade gains indicates that the school differences in gains are significant but that the method \times schools interaction is negligible. Thus the variation in gain differences is not a matter of concern.

Naturally not all went well with the experimental groups nor badly with the control groups. If one considers gains up to 0.3 as unsatisfactory progress, and gains of 1.5 or more as ex-

TABLE II
Mean Reading Score Gains and Gain Differences

Grade School		Experimental Group		Control Group		Differences		t	P
		Mean	S.D.	Mean	S.D.	Mean	S.D.		
4	A	1.55	0.89	0.94	0.78	0.61	0.20	3.01	.01
4	B	1.17	0.66	0.52	0.90	0.65	0.22	2.97	.01
4	C	1.00	0.65	0.49	0.54	0.51	0.16	3.07	.01
4	D	0.96	0.60	0.53	0.68	0.43	0.18	2.38	.05
4	Total	1.17	0.74	0.62	0.76	0.55	0.10	5.75	.001
5	B	1.01	0.68	0.32	0.74	0.69	0.20	3.69	.01
5	D	0.85	0.89	0.49	0.65	0.36	0.20	1.74	.10
5	Total	0.93	0.79	0.41	0.70	0.52	0.14	3.76	.001
6	A	1.28	0.93	0.78	0.88	0.50	0.21	2.38	.05

ceptional progress, one can see from Table III that about 11% of the experimental subjects made unsatisfactory progress while over 13% of the control group had gains classified as exceptional. A majority of both groups made "satisfactory" progress. Nevertheless the experimental procedures appear to have shifted the entire distribution in a positive direction.

Since initial score was not controlled, the possibility that the gain differences obtained were artifacts of the initial score differences must be considered. It was possible to match half the 4th-grade experimental sample with subjects in the control sample by school, sex, and initial score. The mean initial score of these

TABLE III
Numbers of Experimental and Control Subjects Whose
Grade Score Gains Fall into the Categories
Unsatisfactory, Satisfactory, or Exceptional

Group	Unsatisfactory Gain	Satisfactory Gain	Exceptional Gain	Total
	- 1.6 - + 0.2	+ 0.3 - + 1.4	+ 1.5 - + 4.1	
Experimental	24	115	71	210
Control	64	118	28	210
Total	88	233	99	420

$$\chi^2 = 36.9, df = 3, P < .001$$

60 pairs was 3.66 and their gains were 1.29 and 0.75, yielding a difference of 0.54 ($t = 3.90$, $P < .001$) in favor of the experimental group. This gain difference is practically identical with that of the whole group. Hence it seems unlikely that variations in initial score have distorted the results.

Furthermore intelligence appears to be a more relevant variable than initial score. For the 4th-grade sample the correlations between gain and IQ were $+ .39$ and $+ .24$ for the experimental and control groups respectively; the correlations between gain and initial score were $+ .18$ and $- .01$ for the experimental and control groups respectively. Hence, where gains are the criterion it would appear more efficient to control intelligence than initial score.

As might be inferred from the results of the analysis of variance, the relationship of gain difference to IQ was considerably less than that for gain and IQ. Mean IQ for each pair and the corresponding gain differences had a correlation of $+ .13$. No relationship between initial score and gain difference could be detected.

It so happened that 15 of the 30 experimental 5th-grade subjects in School B were selected as control subjects for the 4th grade. The gain of these 15 was 0.99 in the 5th grade and 0.47 in the 4th. The difference of 0.52 is less than that found in either grade in this school but is significant ($t = 2.35$, $P < .05$) and corresponds closely to the overall differences in each grade.

DISCUSSION

A great variety of explanations of the above results can be offered. However, since this study paralleled Russell's in design with one exception and obtained results like those of Morgan and Stucker, these explanations should probably not include those suggested by the contrasts between the two previous studies. The selection of control subjects from the same school as the experimental subjects is the one feature of our procedure more like Morgan and Stucker's than Russell's. Therefore, it may be that the two sets of schools used by Russell were not comparable which, if true, could account for the apparent lack of difference

he found. The significant differences in gain among the schools studied here points up this possibility.

Of the reasonable explanations remaining only three will be discussed.

1) The most generally accepted rationale for the Joplin plan is the homogeneity in reading skill obtainable. Russell reports that a large majority of the advantages of circling cited by teachers and principals centers around this notion. Morgan and Stucker suggest that this homogeneity permits the slow student to be in a non-threatening situation, thereby increasing the amount of positive reward he can obtain from the material he can actually read. Certainly this is reasonable, and if it is the major factor then the intergrade feature of the plan is merely a concomitant of school size and can be ignored in large schools, as is now done in Schools A and B.

A report by Carlson and Northrup (1) may be taken as supporting this view if one can assume that the pupils in that study were not above average in age, intelligence, or previous training. Also it may be noted that Floyd in his original report of the Joplin plan did not suggest that there was any advantage of the intergrade feature other than the greater homogeneity in reading skill it made possible.

2) The possibility must be considered that a positive element in the situation is the increased heterogeneity, the greater variety of contact and stimulation the multigrade shuffling entails. It is not impossible to conceive of the self-contained classroom as becoming a rather restricted and deadening environment as a school year wears on—same old room, same old teacher, same old bunch of well-known faces, voices, and ideas.

Hull (3) has reported a study from which he argues that the age spread which non-homogeneous, multigrade grouping provides is advantageous to both the younger and the older pupils in such a group. The mean gain differences in reading reported by Hull are considerably smaller than those obtained by Morgan and Stucker and in the present study. Perhaps this means that the Joplin plan combines the advantages of homogeneity and diversity. In any case, a comparison of the intragrade approach

with the intergrade procedure would be helpful in evaluating the relative importance of some of these variables.

3) The final possibility to be considered is that because of the special periods more time is spent on direct reading instruction and there is more preparation and emphasis on this instruction by the teachers than is customary. This special preparation by the teachers, including the procurement of materials, was described both by Floyd and by Morgan and Stucker as a basic feature of the plan. This factor was partially controlled in Morgan and Stucker's study since the teachers of the control classes had access to the additional materials purchased for the experiment. Many of the teachers in the present study cited the necessity of such preparation along with "homogeneity" as an asset of the plan. It should be noted that reading instruction was not (and probably could not be) confined to the special periods. This might mean that the gains were made at the expense of other areas of the curriculum. The comments of several teachers and principals contradict this gloomy notion; in fact, improvement in other areas was claimed. Nevertheless, future studies could profitably include measures of gain in other subjects.

These three explanations, while different, are not mutually exclusive. They all permit the conclusion that some departure from the self-contained classroom has advantages. Therefore, studies of the Joplin plan in departmentalized elementary schools would contribute to the determination of the more influential features of the plan.

Although this study makes it reasonable to assert that most schools would find that their pupils profited from the adoption of the Joplin plan, further confirmation is needed. It would be helpful if future studies would attempt to evaluate the permanence of gain differences as well as the role played by various factors such as those discussed above.

SUMMARY

In four Atlanta elementary schools, the Joplin plan of interclass grouping by reading ability for reading instruction was tried. Typically students in grades 4-5 and 6-7, or 4-6, met daily for 45 minutes in groups made as homogeneous as possible with

respect to reading score regardless of class, age, grade, or other abilities. September to May gains in reading scores of 4th-, 5th-, and 6th-grade pairs matched by school, grade, sex, IQ, and parental occupation were compared. Control subjects were pupils in these grades the year immediately preceding the inauguration of the plan. For two schools the procedure was new. The other two schools had used it the preceding year.

The differences in mean gains all favored the experimental groups and ranged from 3.2 months to 6.9 months in grade score. The overall mean difference for the 4th grade was 5.5 months (4 schools, 30 pairs each), 5.1 months for the 5th grade (2 schools, 30 pairs each), and 5.4 months for the 6th grade (1 school, 30 pairs.) IQ but not initial score was correlated with gain. Neither variable was related to the difference in gain between the pairs. The advantage of the experimental groups over the control groups did not vary significantly from school to school but the direct gains did.

Brief consideration is given to the way the results may have been affected by three elements characteristic of the Joplin plan: (1) the increased homogeneity of the students in reading ability during reading instruction, (2) the increased heterogeneity of the reading classes in variables other than reading ability, and (3) the greater time, emphasis, and preparation the teachers may devote to reading instruction because of the plan.

Criticism of the self-contained classroom is inferred.

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The Efficacy of Two Organizational Plans for Underachieving Intellectually Gifted Children

*Merle B. Karnes, George McCoy, Richard Reid Zehrbach,
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The general area of concern in this study is that of raising the achievement of underachieving gifted children. The specific problem is that of assessing the relative efficacy of two approaches to improving the performance of gifted children whose present performance marks them as underachievers. One approach is that of placing a small number of underachieving gifted children in homogeneous classes with gifted children who are achieving at a level commensurate with their abilities. The other approach to be tested is that of placing underachieving children in heterogeneous classes made up of children with a wide range of intellectual abilities. Since motivation, habits, interests, and attitudes established at an early age tend to affect academic achievement in subsequent years, identification and treatment of young underachievers was deemed to be important. Thus, subjects chosen for the study were intellectually gifted underachievers at the elementary level.

In general, the hypotheses investigated in this study were that underachieving intellectually gifted children enrolled in homogeneous classes with high achieving intellectually gifted children would significantly raise their level of academic achievement, would manifest more creativity, and would perceive them-

selves as being better accepted by their peers and by their parents. Specifically, the following hypotheses were tested in this study:

1) Underachieving gifted pupils enrolled in homogeneous classes would make greater academic gains relative to expectancy than underachieving gifted pupils enrolled in heterogeneous classes.

2) Underachieving gifted pupils enrolled in homogeneous classes would make greater gains in creativity than underachieving gifted pupils enrolled in heterogeneous classes.

3) Underachieving gifted pupils enrolled in homogeneous classes would manifest greater gains in perceived acceptance by peers than underachieving gifted pupils enrolled in heterogeneous classes.

4) Underachieving gifted pupils enrolled in homogeneous classes would manifest greater gains in perceived parental acceptance and intrinsic valuation than underachieving gifted pupils enrolled in heterogeneous classes.

SUBJECTS

The subjects for this investigation were drawn from a pupil population of approximately 840, consisting of all pupils in attendance at two large elementary schools serving comparable and adjacent upper-middle class socio-economic areas. A thorough screening procedure was conducted which utilized teacher nominations, group intelligence tests, group achievement tests and individually administered Stanford-Binet (1937, Form L) vocabulary tests. Following the screening, the 1937 Stanford-Binet Intelligence Scale was administered to 465 potential subjects. Appropriate forms of the California Achievement Tests were also given.

Approximately 27 pupils at each of the four grade levels in each of the elementary schools ($N = 223$) were found to have Stanford-Binet IQ's of 120 or higher. Individual grade placement scores in arithmetic and reading for each of these pupils were compared to the Horn formula (1941) corrected values for expected achievement in these areas [$\text{Reading} = (2 \text{ MA} + \text{CA})/3 - 5$; $\text{Arithmetic} = (\text{MA} + \text{CA})/2 - 5$] to obtain achievement

discrepancy scores in reading and arithmetic for each pupil. These two discrepancy scores were averaged for each pupil to obtain the pupil's average achievement discrepancy score. The average achievement discrepancy scores were plotted for each grade level and pupils whose achievement discrepancy was one standard deviation or more below the mean of children at their grade level were classified as underachievers.

Approximately five underachievers were identified in each of grades two, three, four and five at each of the two schools. During the following school year, identification and screening procedures were repeated with all pupils completing the first grade. New subjects ($N = 10$) thus identified at both schools were added to the experimental ($N = 5$) and control ($N = 5$) groups. The subjects for this study, then, consisted of 25 underachieving gifted pupils placed in homogeneous classes with intellectually gifted pupils who were high achievers, and 23 underachieving gifted pupils placed in heterogeneous classes with pupils of varied intellectual ability. (Two subjects moved from the community and thus were dropped from the study.)

At the beginning of the 1959-1960 school year, the gifted pupils in one school were placed in homogeneous classes. Teachers assigned to these gifted homogeneous classes were picked randomly from all teachers regularly assigned to that school. At the other school, the gifted pupils were randomly interspersed among the several heterogeneous classes at their grade level. Regardless of treatment the classes to which the children were assigned were approximately equal in size. All subjects had been in the study a minimum of two years and a maximum of three years.

A summary of the characteristics of the two groups of subjects is presented in Tables 1 and 2.

The two groups, as shown in Table 1, did not differ significantly with respect to boy-girl ratio or chronological age. They did differ, however, with respect to measured intelligence ($p < .05$).

The two groups, as noted in Table 2, did not differ significantly with respect to socio-economic status as indicated by fathers' occupations ($p = .34$).

TABLE 1
Characteristics of Underachieving Subjects

	Homogeneous	Heterogeneous	Statistical Significance of Difference between Groups
N	25	23	
N of Boys	19	14	$\chi^2 = .67; p = .40$
N of Girls	6	9	
Mean CA	11.0	11.0	$t = 0.00; p = .99$
Mean IQ	144.8	135.8	$t = 2.11; p = .04$
SD of CA	1.43	1.36	
SD of IQ	17.23	11.24	

TABLE 2
Father's Occupation as an Index of Socio-Economic Status

Class*	1	2	3	4	5	6 and 7
Homogeneous	12	5	4	2	2	0
Heterogeneous	6	5	2	3	6	0

* Classified according to Warner's Revised Scale for Rating Occupation (1949). Median test yields $\chi^2 = .95; p = .34$. The numbers represent categories of decreasing status, with 1 being the category of highest status.

PROCEDURE

Instructional materials, curricular offerings and various types of services, such as those of the school consultant for gifted pupils, were made available equally to both schools participating in the study. The treatment of the two groups of subjects differed only in that the subjects were placed either in homogeneous classes whose members had all been identified as intellectually gifted or in heterogeneous classes whose members had intellectual ability ranging from dull-normal to gifted.

Initially, measures of perceived parent attitudes, perceived peer relationships, and academic achievement were obtained from all subjects in grades two, three, four, and five. Thereafter, these measures were obtained from each new group of subjects entering the second grade. Posttests of achievement were administered to all subjects in all grades at the end of each school year.

In addition, post measures of perceived parent attitudes and perceived peer relationships were made after the children had been in the project for two or three years. Creativity tests were administered initially to the fourth and fifth grade subjects the first year of the study and again when these subjects were in the sixth grade ($N_{\text{Homo.}} = 10$; $N_{\text{Het.}} = 9$). Creativity tests were not administered to second and third grade subjects because of their limited ability to respond in writing.

MEASURING INSTRUMENTS

An appropriate level of the California Achievement Tests was used to determine the subjects' level of achievement in reading and arithmetic. Perceived parental attitudes were ascertained by the Perceived Parents Attitude Scale developed by Ausubel, Balthazar, Rosenthal, Blackman, Schpoont and Welkowitz (1954). The subjects' perceived peer acceptance was measured by the Perceived Peer Relationships Scale as described in a study of overachieving and underachieving gifted pupils carried out by the Champaign Schools. Creative ability was evaluated by tests of creativity used by Wollersheim (1960). The tests of creative ability were entitled the *Unusual Uses* and the *Consequences* tests. A fluency score and a flexibility score are obtained from the *Unusual Uses* test. These two scores measure ideational fluency and spontaneous flexibility respectively. The *Consequences* test yields an obvious score which also measures ideational fluency and a remote score which is an index of originality. Thus, the three abilities of fluency, flexibility, and originality which have been found to be involved in creative ability (Guilford, 1950) were sampled.

RESULTS

The analysis of the differences between the two groups of subjects on the variables investigated was complicated by the unexpected finding that the subjects in the homogeneously grouped classes had a higher mean IQ than did the subjects in the heterogeneously grouped classes. Consequently, the academic achievement manifested by the two groups was compared by using

achievement discrepancy scores to correct for differences in IQ. Changes in achievement were compared by subtracting the pre-achievement discrepancy score from the post achievement discrepancy score. Changes in the two groups in the areas of creative ability, perceived parental attitudes and perceived peer relationships were analyzed in terms of the gain scores.¹ The possibility remains that the subjects in the homogeneous group, because they had greater learning ability, might be expected to make greater gains in the areas of creative ability, perceived parental attitudes and perceived peer relationships. The literature shows, however, that the relationship between creativity and IQ is negligible in groups of children whose IQs are 120 or above. Furthermore, the relationship of intelligence to perceived parental attitudes and perceived peer relationships also appears to be negligible.

Since it was hypothesized that the subjects in the homogeneous group would manifest greater gains when compared to the subjects in the heterogeneous groups, one-tailed values of significance were used in the interpretation of the statistical tests of the differences between the groups. Only those values which would occur by chance less than once in 20 times ($p = .05$) were considered as representing statistically significant differences. The data comparing the two groups of subjects following treatment are presented in Table 3.

DISCUSSION

ACADEMIC ACHIEVEMENT

It was expected that the academic achievement of the subjects in the homogeneous group would be higher than that of the subjects in the heterogeneous group since the subjects in the homogeneous group would have access to a greater concentration of stimulating ideas and interests and would be under more pressure to aspire to higher goals and standards than would the subjects in the heterogeneous group. Although the expectation that the subjects in the homogeneous classes would have higher

¹ A subsequent analysis of covariance in which differences in IQ were controlled yielded results essentially identical with those herein reported.

academic achievement than would the subjects in the heterogeneous classes was confirmed, the interpretation of this finding was confounded by differences between the two groups that occurred when additional groups of second grade subjects were added in the longitudinal study.

The result of the addition of the second grade subjects was that the mean IQ of the subjects in the homogeneous group became significantly higher than the mean IQ of the heterogeneous group. This was not true the first year of the study. In addition, the subjects in the homogeneous group had a higher mean achievement score (grade 4.4) than did the subjects in the heterogeneous group (grade 4.2). The difference between these mean achievement scores, however, was not statistically significant ($p = .74$).

The influence of the difference in the learning ability of the subjects in the two groups was expected to be the most pronounced with respect to comparisons of the academic achievement, since IQ and achievement tests scores are highly correlated. A procedure making use of achievement discrepancy score differences was used in an attempt to correct for the influence of learning ability in contributing to the academic achievement of the subjects in the two groups. When the difference in the learning ability of the subjects was so controlled, the mean achievement discrepancy gain score ($\bar{X} = .19$) of the subjects in the homogeneous group was higher than that of the subjects in the heterogeneous group ($\bar{X} = .67$). The difference between the mean achievement discrepancy gain scores of the two groups of subjects was statistically significant ($p < .05$).² The finding of higher academic achievement on the part of the subjects in the homogeneous group seems to reflect, with a reasonable degree of certainty, the influence of differences in the treatment afforded the two groups of subjects.

It is possible that the greater gains in achievement made by the subjects in the homogeneous group could have resulted from the higher intellectual ability of this group. The achievement gains of the two groups were compared, however, by gains in achievement discrepancy scores, a procedure which allows for the

² An analysis of covariance yielded essentially the same findings.

gain in academic achievement according to achievement expected on the basis of individual learning ability. This procedure would seem to minimize the influence of differences in intellectual ability.

The findings with regard to achievement can be interpreted as being similar to the finding of Dreyer (1953) and Hochbaum (1953) who found that individuals will seek to change their level of performance to agree more with that of the group. This tendency has been found to be more evident in groups made up of persons of homogeneous abilities or opinions, however, than in groups made up of persons of varied ability or opinion (Festinger and Gerard, 1952; and Dreyer, 1953). The possibility also exists that teachers of the homogeneous groups may have changed their teaching behavior in accordance with the advanced interests and cognitive development displayed by the gifted children. There were, however, no measures of changes in teacher behavior included in this study to test such a possibility.

CREATIVE ABILITY

It was hypothesized that the subjects in the homogeneously grouped classes would manifest a higher degree of creative ability than would the subjects in the heterogeneously grouped classes because the degree of stimulation was assumed to be greater in the homogeneously grouped classes. Creative ability was measured by the subjects' performance in the areas of ideational fluency, ideational flexibility, and originality of thought. The two groups differed significantly on two of the four initial measures of creativity (flexibility and originality). Accordingly, the investigation of the differences between the creative ability of the subjects in the two groups was made by evaluating the gains evidenced between pretest and posttest measures of creativity. The differential gains of the two groups in creative ability are considered to be a function of the differences in treatments afforded the subjects in the two groups.

As was hypothesized, the difference in the gain scores of the creativity measures indicated that the subjects in the homogeneously grouped classes had attained a higher degree of ability on certain of the creativity factors than had the subjects in the

TABLE 3

Analysis of Data on Underachievers in Regular and Special Classes^a

	Homogeneous			Heterogeneous			<i>F</i> ^b	<i>t</i> ^c
	Mean	SD	N	Mean	SD	N		
Achievement Discp. Score	1.19	.78	25	.67	.89	23	1.30	2.17*
Per. Par. Attitude Score	4.36	13.34	25	-3.5	20.43	22	2.35*	1.73*
Per. Peer Rel. Score	-.76	9.17	25	-1.5	13.49	22	2.16	.21
Creativity Scores								
Fluency	14.0	6.27	10	6.4	8.50	9	1.84	2.23*
Flexibility	8.2	3.81	10	5.7	4.75	9	1.54	1.27
Obvious	6.1	11.06	10	3.2	6.27	9	3.11	.70
Remote	3.3	5.77	10	3.0	2.87	9	4.03*	.15

* = $p < .05$ ^a Analysis involved gains obtained by contrasting pretest and posttest measures.^b *F* test contrasting the variances of the two groups.^c *t* test contrasting the means of the two groups.

heterogeneously grouped classes. On the factor of fluency, the subjects in the homogeneous group had a mean difference score of 14.0 and subjects in the heterogeneous group had a mean difference score of 6.4 ($p < .05$). With respect to the factor of flexibility, the subjects in the homogeneous group had a mean difference score of 8.2 while the subjects in the heterogeneous group had a mean difference score of 5.7 ($p = .11$). For the obvious score, which also measures fluency, the subjects in the homogeneous group had a mean difference score of 6.1 while the subjects in the heterogeneous group had a mean difference score of 3.2 ($p = .23$); and for the originality factor, represented by the remote score, the subjects in the homogeneous group had a mean difference score of 3.3 while the subjects in the heterogeneous group had a mean difference score of 3.0 ($p = .42$). The finding that the subjects in the homogeneous group manifested higher gains on the creative ability factors than did the subjects in the heterogeneous group, with a statistically significant difference on the factor of fluency, seems to reflect the more favorable influences accruing from placement in the homogeneously grouped classes. These differences were found despite the fact that measures of creativity were available on only a small number of subjects ($N = 19$) and that the subjects had only two years of differential

treatment. It seems likely that a greater number of subjects may reveal even greater differences between the two groups.

PERCEIVED PARENTAL ATTITUDES

It was hypothesized that the subjects in the homogeneous group, when compared to the subjects in the heterogeneous group, would see themselves as more accepted and more intrinsically valued by their parents. The initial measures of perceived parental attitudes showed that the subjects in the heterogeneous group had a higher mean score (139.0) than did the subjects in the homogeneous group (136.4). Although the subjects in the heterogeneous group thus appeared to see themselves as more accepted and intrinsically valued by their parents than did the subjects in the homogeneous group, the difference between the two groups was not statistically significant ($p = .58$). After two years of treatment, however, measures of perceived parental attitudes revealed a mean net increase of + 4.36 for the subjects in the homogeneous group while there was a mean net decrease of - 3.5 for the subjects in the heterogeneous group. The difference between the mean net gain scores was statistically significant ($p = .05$), indicating that subjects in the homogeneous classes saw themselves as more accepted and intrinsically valued by their parents.

It must be recognized that the change in perceived parental attitudes could have been fostered by the parents of the subjects being made aware of the "intellectually gifted" nature of their children. Since parents of subjects in both the homogeneous and the heterogeneous groups were informed of this attribute of their children in the same way and at the same time, this explanation does not seem adequate for accounting for the observed differences in perceived parental attitudes. There is the possibility that the parents' perception of the pupils as "intellectually gifted" was differentially reinforced with respect to the two groups of subjects, since pupils in the homogeneous groups were placed in "special" classes. It is likely that special class placement proved to be a topic of interest in parent-school-centered activities and groups. The scope of this study did not provide specific measures relevant to this issue which appear to warrant additional investigation.

PERCEIVED PEER RELATIONSHIPS OF SUBJECTS
IN HOMOGENEOUS AND HETEROGENEOUS GROUPS

Although perceived peer relationships, like perceived parental relationships, were conceptualized within the framework of this study as being more indirectly related to changes in capacity for making use of intellectual ability, it was hypothesized that the subjects in the homogeneous group would see themselves as more accepted by their classmates after treatment when compared with the subjects in the heterogeneous group. This hypothesis grew out of the expectation that the subjects in the homogeneous group would be more likely to attain a higher degree of academic achievement and the associated successes in meeting goals and standards held by their classmates would propitiously influence these pupils' perceptions of being accepted by their peers.

In the initial measures of perceived peer acceptance, it was found that the subjects in the homogeneous group had a slightly higher degree of perceived peer acceptance (mean = 119.9) than did the subjects in the heterogeneous group (mean = 113.5). This initial difference between the mean perceived peer acceptance scores was not statistically significant ($p = .08$). Contrary to the expected change, the net gains in perceived peer acceptance after two years of treatment were in a negative direction for both groups. The mean gain for the subjects in the homogeneous group was $-.76$ and the mean gain in perceived peer acceptance for the subjects in the heterogeneous group was -1.5 . The difference between the mean gain scores of the two groups of subjects was not statistically significant ($p = .40$). Although the loss in perceived peer acceptance was less for those subjects in the homogeneous than for those subjects in the heterogeneous group; the failure of the subjects in the homogeneous group to manifest a higher degree of perceived peer acceptance, especially in the light of their having a higher degree of academic achievement, is puzzling. The finding that the subjects in both groups evidenced a drop in degree of perceived peer acceptance, however, may not be too surprising in view of the low degree of peer acceptance which seems to characterize underachievers as a group.

The data obtained in this study after a minimum of two

years of treatment do not support the expectation that underachieving gifted pupils placed in a homogeneous class will have a higher degree of perceived peer acceptance.

Although it was not possible to verify the hypothesis regarding perceived peer acceptance at this stage of the study, it is possible that significant differences in perceived peer relationships may become manifest after a longer treatment period. Although neither group made gains with respect to perceived peer acceptance, it is reassuring to note that gifted underachievers placed in homogeneous classes are able to achieve more academically without appreciably sacrificing their social status.

REPRESENTATIVENESS OF FINDINGS

This study has compared the influence of placement in homogeneously grouped and heterogeneously grouped classes upon the academic achievement, creative ability, perceived parental attitudes, and perceived peer relationships of two groups of underachieving, academically gifted, elementary school pupils. The subjects were of superior intellectual ability and came from higher white socio-economic backgrounds. The two groups did not differ significantly as to boy-girl ratio.

The finding that placement in homogeneously grouped classes is conducive to higher academic achievement and higher creative performance is confounded by the fact that the subjects in the homogeneously grouped classes had a higher degree of intellectual ability. The association of special class placement with a higher degree of perceived parental acceptance and intrinsic evaluation may apply only to intellectually gifted underachievers from higher socio-economic levels where educational achievement is highly valued. The influence of such treatment upon perceived peer acceptance is not clear.

IMPLICATIONS

- Early identification of the underachievers at the elementary levels, as early as the first grade, and placement of these underachievers in homogeneous classes with high achievers seems to be desirable. In addition, although a well developed screening program is needed to identify the intellectually gifted who are

achieving, even more precise procedures for identifying the underachievers at a young age are needed.

- The complex problems of the underachieving intellectually gifted suggest the need for a well developed in-service training program for administrators and teachers.

- Since creativity is associated with academic achievement and since the underachievers in homogeneous classes were found to be more fluent after two or more years in homogeneous classes, it is suggested that creativity among underachievers may be fostered by placing these children with others of like intellectual potential and high achievement. Teachers should be aware of the high positive relationship between creativity and achievement, and thus encourage and reward creative expression.

SUMMARY

This study investigated the efficacy of placing a small proportion of gifted underachievers in homogeneous classes with high achievers, as compared with placing underachieving intellectually gifted children in heterogeneous classes. It was hypothesized that placing underachievers in a homogeneous class with high achievers would stimulate the underachievers to raise their level of achievement, become more creative, and perceive their peers and parents as being more accepting of them.

Intellectually gifted subjects in grades two through five were selected from two large elementary schools. A total of 223 pupils were identified who obtained an intelligence quotient of 120 or above on the 1937 Stanford-Binet. Achievement grade expectancies in reading and arithmetic as determined by the Horn formula (1941) were then compared with corresponding achievement test scores. Pupils whose average achievement discrepancies deviated -1 SD or more from the mean of their group were designated as underachievers. Approximately five underachievers at each grade level were placed in homogeneous classes with high achieving gifted children and five underachievers at the same grade levels were placed in heterogeneous classes with children of varying intellectual levels. The following year five additional second grade subjects were added to each group. After a treatment

period of from two to three years, data obtained from all subjects were analyzed.

The subject's achievement, perception of parental attitudes, perception of peer acceptance, and creative ability were studied.

Analysis of the data was confounded by differences in IQ between the two groups. Consequently, statistical techniques designed to correct for this confounding were utilized.

HYPOTHESIS 1: ACHIEVEMENT

It was hypothesized that intellectually gifted pupils enrolled in homogeneous classes would make greater gains relative to academic expectancy than underachieving intellectually gifted pupils enrolled in heterogeneous classes. The difference in gains in achievement between the gifted underachievers in homogeneous classes and gifted underachievers in heterogeneous classes, corrected for IQ difference, was statistically significant ($p = .02$). Hence, the hypothesis was accepted.

HYPOTHESIS 2: CREATIVITY

It was hypothesized that intellectually gifted underachievers placed in homogeneous classes would manifest greater gains in creativity than intellectually gifted underachievers enrolled in heterogeneous classes. Although underachieving gifted pupils in homogeneous classes did manifest higher mean scores on all four creativity tests than did underachieving gifted pupils enrolled in heterogeneous classes, the differences reached statistical significance only in the area of the fluency score (fluency, $p < .05$; obvious, $p = .23$; remote, $p = .42$; flexibility, $p = .11$). Thus, the hypothesis was given only partial confirmation by the data.

HYPOTHESIS 3: PERCEIVED PEER ACCEPTANCE

It was hypothesized that intellectually gifted underachievers placed in homogeneous classes would manifest greater gains in perceived peer acceptance than would underachieving intellectually gifted pupils placed in heterogeneous classes. This expectation was not substantiated ($p = .40$). Analysis of the data did not support the hypothesis and, in fact, both groups decreased in perceived peer acceptance.

HYPOTHESIS 4: PERCEIVED PARENT ATTITUDES

It was hypothesized that underachieving intellectually gifted pupils placed in homogeneous classes would manifest greater gains in perceived acceptance and intrinsic valuation by their parents than would underachieving intellectually gifted pupils placed in heterogeneous classes.

The difference between the two groups was statistically significant ($p = .05$). This hypothesis was accepted.

The findings of this study suggest the administrative plan for improving academic achievement among the intellectually gifted underachievers by placing them in homogeneous classes with high achievers has some merit since it appears to foster increased achievement, improved perceptions of parent-child relationships, and improved creativity.

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PART III

Departmentalized and Semidepartmentalized Grouping Plans

VARIOUS PLANS FOR GROUPING along departmental lines in the elementary school can be thought of as representing a continuum of practices. At one extreme is the elementary school that is organized as the traditional high school with a separate teacher for each subject. At the other extreme is the self-contained elementary school classroom in which special teachers of music and art present their subjects on a regularly scheduled basis.

The last few years have seen an increase in literature inclined toward more departmentalization. In the vast collection, no suggestions are made that envisage complete departmentalization for the elementary schools. The plan most often found can be characterized as *semidepartmentalized grouping*. In general in the semidepartmentalized setup, children spend half a day with one teacher in a homeroom. The other half day is taught by specialists through a schedule of periods of time. In some plans the teachers specialize in a subject-matter area and have two or more groups of pupils each day in that area.

Some other present-day programs call for a basic homeroom grouping built around a reading or language-arts core and involve a regrouping for specialists in science and mathematics. Rather than departments, these regroupings are called clubs.

There are numerous variations and types of departmentalization in the elementary schools. The increasing pressures on the elementary school teacher to be adept in teaching the rapidly expanding areas of knowledge with insight, precision, and intellectual clarity may indeed lead to a greater use of various departmentalized plans. A general summary of the advantages and disadvantages may help the reader as he studies the selections in this area.

The advantages claimed are that:

- Departmentalization of school organization takes into account the fact that it is the rare teacher who has considerable competence in more than one or two areas of knowledge.
- All other things being equal, the greater and more intense the teacher's understanding of a subject, the greater the possibility of excellent instruction.
- Any one teacher is limited in the knowledge and time for preparation and (possibly by personal preference) in the number of techniques of instruction used, and all children do not respond equally well to all methods, with more than one teacher.
- Arrangements for the teacher to have some free time during the day for planning are more readily made.
- No subject is slighted because of lack of interest or lack of knowledge of a teacher.
- If the teacher knows her subject very well, she may more truly know and evaluate the child's development within this frame of reference.
- Adjustment of the children is as good and perhaps even better under the semidepartmentalized plan.
- Boys need adult males as role models and there is more chance of getting men interested in teaching in a departmentalized school.
- There is more complete and full time use of school facilities.
- Pupils are promoted by subject instead of by grade.
- Specialization makes it easier for the teacher to keep in touch with developments in teaching methods, materials, equipment, and the professional literature.

The disadvantages claimed are that:

- Departmentalization tends to make the curriculum subject-centered rather than child-centered.
- A schedule must be maintained rigidly.
- It lacks coordination in that one teacher knows very little about what other teachers are endeavoring to teach at any particular time.
- There is more difficulty in teaching a unit where learnings in several subjects are undertaken together.
- The greater the amount of departmentalization, the less time each teacher spends with each child, and the less opportunity she has of becoming thoroughly acquainted with him.
- For some children, particularly slow developers, many changes of class group and teacher throughout the day might present problems in adjustment.
- The mechanical aspects of evaluation, record keeping, and reporting to parents are more difficult.
- Superior supervision needs to be provided to coordinate all phases of a departmentalized program.
- It works in direct opposition to the concept of integration as "real" learning and emphasizes instead subject-matter acquisition as real learning.

Both Woods and Broadhead deal with aspects of departmentalization and come up with polar points of view.

Woods finds no advantages in his controlled study, and Broadhead finds distinct advantages, especially in the area of pupil adjustment. Gibb and Matala feel that in science, at least, special teachers create more effective learning for children. They found that this was not the case for mathematics, however. Livingston, in his work, isolates a major variable that was not controlled by Broadhead, the community. His research design, with this community incorporation, derived conclusions much the same as did the Broadhead study. The interesting caution about grouping offered by Livingston is compatible with the evaluations of current proposals for grouping as analyzed and discussed by Hamalainen in the article that closes this section.

Relative Merits of Departmental and Non-departmental Elementary Schools

Roy C. Woods

For several years there has been a difference of opinion relative to the advantages and disadvantages of departmental and non-departmental teaching in the elementary schools. It was the purpose of this study to investigate the results of these types of organization in two schools of striking similar environmental backgrounds. In this study departmental teaching meant that a class had different teachers in each subject similar to the system used in high schools; whereas, the traditional or non-departmentalized teaching was the type where one teacher was responsible for all the subjects taught in a given grade.

Dougherty, Gorman, and Phillips¹ explained that:

The characteristic feature of departmental instruction is that a teacher who is highly trained in a field of knowledge is assigned to teach English, which in the elementary school would include reading, writing, language, spelling, and literature; another teacher is assigned to the social studies, including history, geography, and citizenship in elementary schools; another to mathematics; another to natural science, etc. . . . This type of organization has been introduced somewhat extensively in the intermediate and grammar grades. . . .

Reavis, Pierce, and Stullken² described the traditional type of school as follows:

The traditional or regular organization of the elementary school consisted of a group of classrooms with a teacher for each room who accepted responsibility for the complete education of the group of pupils assigned to the room.

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¹ J. H. Dougherty, F. H. Gorman, and C. A. Phillips, *Elementary School Organization and Management*. New York: The Macmillan Company, 1936, p. 31.

² William C. Reavis, Paul R. Pierce, and Edward H. Stullken, *The Elementary School*. The University of Chicago Press, 1931, p. 7.

Dougherty, Gorman, and Phillips³ gave some arguments for and against the departmental organization in the elementary school. Their statements are set forth in the following excerpt:

Some of the advantages claimed for departmental organization are that it (1) provides for more efficient instruction; (2) offers an enriched curriculum; (3) more highly trained teachers can be secured; (4) allows for concentration of equipment; (5) pupils may be promoted by subjects instead of grades; (6) pupils have contact with more teaching personality; and (7) both teachers and children in schools with departmentalization favor it.

The arguments against departmentalization are that (1) it overemphasizes subject matter; (2) teachers are only narrow specialists; (3) behavior problems are more difficult to handle; (4) it destroys the unity of school life for the pupil; (5) prevents integration of subject matter; and (6) the plan has been borrowed from secondary school practice.

Both School A in which departmentalization prevailed and School B organized on the traditional plan were located in the same area of an industrial development. The parents of both groups of children were economically dependent upon chemical and coal industries and were located in the same county with the same supervisory contacts and approximately the same quality of teacher preparation and experience. Table I shows how similar they are in socio-economic backgrounds. Table II shows that on mental ability the two groups were not equated and this point must be remembered in evaluating the final results of this study. The questionnaire was used to secure the necessary background of each child. A thorough survey of the social, cultural, economic, and health status of all the members of both eighth grade classes was conducted.

The questionnaire proved that the two communities were very similar economically, socially, culturally, and in matters pertaining to health. This and the permanent record and census cards furnished additional data. Personal interviews were used when necessary to secure needed data. The first test given to the eighth grade pupils of the two schools was the *Otis Quick-Scoring Mental Ability Test*, Beta, Form A.

This test was given September 23, 1949, by the principals

³ *Op. Cit.* pp. 31-32.

TABLE I
Socio-Economic Background

Factor	School A		School B	
	Departmental Number	Per Cent	Non-Departmental Number	Per Cent
Parents with Only Elementary Education	20	66.7	20	58.8
Those with High School Education or More	10	33.3	14	41.2
Five or Less in Family	13	86.6	11	64.7
More than five in Family	2	13.3	6	35.3
Average size of Family	4.49		4.65	
Chief Wage Earner was Father	10	66.8	12	70.6
Chief Wage Earner was Mother	1	6.7	1	5.9
Both Parents Worked	2	13.3	3	17.7
Step Mother and Father	2	13.3	1	5.9
Owned Homes	12	80.0	15	88.2
Rented Homes	3	20.0	2	11.8
Owned a Car	10	66.7	13	76.5
Bathroom in Home	10	66.7	7	41.2
Musical Instrument	8	53.3	10	58.8
Radio	12	80.0	15	88.2
Refrigerator	5	33.3	8	47.1
Telephone	11	73.3	10	58.8
Attended only One School	6	40.0	8	47.1
Attended Two Schools	5	33.3	5	29.4
Attended Three Schools	4	26.7	4	23.5

of the two schools both of whom have had considerable experience in administering tests. They showed a keen and impartial interest, and the best of cooperation was given. Conditions prevailing at both of the schools were as nearly the same as was found possible, and the directions were followed implicitly.

Upon scoring and ranking the tests it was found that School A had a median chronological age of fourteen years and one month, had a median intelligence quotient of ninety-two, and a median mental age of thirteen years, while the School B had a median chronologically of fourteen years and nine months, had a median intelligence quotient of seventy-eight, and a median mental age of eleven years and six months. This gave the School A an advantage of fourteen points in intelligence quotient and an advantage of one year and six months in mental age. Apparently

TABLE II
Mental Ability Status

Status	Departmental Class Medians School A	Non-Departmental Class Medians School B
Chronological Age (Years and Months)	14 - 1	14 - 9
Intelligence Quotient	92	78
Mental Age (Years and Months)	13 - 0	11 - 6

School B should have been outdistanced considerably in achievement, but exactly the opposite happened as will be shown in the achievement tests.

The achievement tests were given under conditions very similar to those described in administering the mental tests.

The first of the achievement tests was administered in October, so as to establish a point from which to measure the gains in achievement. The test used was the *Stanford Achievement Test*, Advanced Battery—Complete, Form G.

It contained a total score of 550 points which was divided into ten parts under the following subjects: paragraph meaning, forty-five; language usage, one hundred; word meaning, fifty; arithmetic reasoning, forty; arithmetic computation, sixty-five; literature, fifty; social studies, Parts I and II, fifty each; elementary science, fifty; and spelling, fifty.

In analyzing the test results it was not considered necessary to compile tables of comparison on each of the ten parts of the tests for an analytical diagnosis of the achievements in the various fields, but the chief aim was to discover how the general achievements on the entire test compared. In the main, the object was to find, if possible, which type of school organization enhanced pupil achievement more academically.

The second achievement test which was given in May was the *Stanford Achievement Test*, Advanced Battery—Complete, Form D. It was very similar to the first achievement test given and was administered in the same manner and by the same people, but the results differed greatly and in an unexpected direction.

In this second achievement test the unitary School B had a

median equated score of sixty-eight as compared to fifty-four and nine-tenths in the first test, a gain of thirteen and one-tenth points. Its age equivalent increased from ten years and ten months to thirteen years and six months which was a gain of two years and eight months. As to the grade equivalent median it was stepped up from the eighth month of the fifth grade to the fifth month of the eighth grade, a gain of two and seven-tenths grades.

The departmental school, A made a median equated score of sixty-three and six-tenths as compared to fifty-eight and five-tenths in its initial attempt which was a gain of five and one-tenth points. The median age equivalent was raised from eleven years and five months to twelve years and five months, a gain of exactly one year; while the grade equivalent was increased from the fourth month of the sixth grade to the fourth month of the seventh grade, or a gain of exactly one grade.

In comparing the academic achievements of the two schools, it was found that School B apparently achieved eight points more in the equated score, one year and eight months more in the growth of age equivalent, and one and seven-tenths grades in grade development than did the departmental school. These facts will perhaps be better understood by a study of Table III.

TABLE III
Medians and Equivalents on the Achievement Tests

Test Number	School A Departmental			School B Non-Departmental		
	Equated Score	Age Equivalent	Grade Equivalent	Equated Score	Age Equivalent	Grade Equivalent
I	58.5	11-5	6.4	54.9	10-10	5.8
II	63.6	12-5	7.4	68.0	13-6	8.5
Apparent gain	5.1	1-0	1.0	13.1	2-8	2.7

From this study it seemed that the learning process in the unitary school was, perhaps, more unified and continuous because the one teacher knew exactly what was being done in every subject. It was also found that assignments were more uniform, that is, distributed more evenly. On the other hand nearly all the pupils of the upper grades preferred departmental work, and it was apparent that the teachers in departmental work were more highly specialized in their particular fields. It was also noticeable

that the departmental system lacked coordination in that one teacher knew very little concerning what the other teachers were endeavoring to teach at any particular time. That factor resulted in pupils having so much outside work to do on certain nights that they found it quite burdensome, while at other times they had little or nothing to do. The last mentioned factor could, of course, have been eliminated if there had been closer teacher contact and closer supervision on the part of the principal.

From these data the following conclusion seems reasonable. It must be understood however that this can only be said of conditions similar to those found in these two schools. No doubt variations in communities would affect the results.

1) Non-departmentalization in teaching seems to favor the poorer students since School B which had the lowest mental ability ratings made the greatest gain between October when the first test was given and May when the second achievement test was administered.

2) This may be due to the fact that the total learning process was better coordinated and integrated in the traditional and unitary type of school organization.

3) The unfortunate variation in mental abilities made an accurate estimate of this advantage impossible.

Pupil-Adjustment in the Semi-departmental Elementary School

Fred C. Broadhead

Since 1926 Tulsa public schools have had the semi-departmental type of elementary-school organization. Today Tulsa remains one of the few large school systems that make extensive use of this form of organization. No complete survey has been

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published recently on the subject, but early in 1959 at a meeting of superintendents of large school systems in San Francisco, four other school systems professed to use the semi-departmental organization at the elementary-school level.

In the semi-departmental school the pupil attends class under several teachers during the day. Through the years the question of the personal adjustment of the pupil under these circumstances has stimulated a great deal of controversy. From time to time speakers at national and regional meetings of educators and writers in professional journals have expressed the opinion that the semi-departmental school tends to create guidance problems and may promote poor social adjustment among children in elementary school. These opinions have not been substantiated by research.

A thorough search of the *Education Index* and *Dissertation Abstracts* for the last ten years reveals no research indicating whether the semi-departmental type of elementary-school organization promotes good or poor social adjustment among pupils. A recent report (1) on teacher attitudes toward the self-contained classroom and the semi-departmental types of elementary-school organization stated in part: "There is no evidence that adjustment to several different teaching personalities is harmful to children; it could even be valuable."

In the Tulsa semi-departmental type of elementary-school organization, the child receives instruction from the homeroom teacher for half the school day in the basic subjects of reading, writing, spelling, arithmetic, language arts, and social studies. During the remainder of the school day, the child receives instruction in other classrooms from various other teachers who have had specialized training in science, art, music, speech, physical education, or library science. This type of classroom organization is in contrast to the self-contained classrooms in which the child receives all, or practically all, his instruction from one teacher in the same classroom.

The purpose of the study reported here was to determine whether there are measurable differences in adjustment between fifth-graders whose school experience has been in self-contained

classrooms and fifth-graders whose school experience has been entirely in the semi-departmental system.

The literature surveyed indicated that in the area of adjustment there are no group measuring instruments that can be relied on to differentiate between individuals on a quantitative scale. Therefore, an entire population was used in the study in the hope that the results would reflect consistent general tendencies that the researchers might expect to find if the experiment were repeated for other similar groups.

The hypothesis tested was that, on the whole, the fifth-graders of the Tulsa public schools who had been in semi-departmental classrooms for the preceding four years did not differ in adjustment from fifth-graders who had been in self-contained classrooms.

The lack of a suitable instrument for evaluating adjustment to different types of elementary-school organization has hampered research in this area. In the present study (2) the SRA Junior Inventory was used to evaluate social adjustment on the basis of problems identified by different groups of school children in the upper grades of elementary school. Established norms of the inventory were used as a basis for comparison.

The instrument is based on research by Bauernfeind. One goal of his study was to provide information on the frequency of children's problems as the children themselves see them. Another goal was to develop normative data so the educator might compare his pupils with pupils from a nationwide sample (3). The accompanying manual rates of more immediate practical importance the information a Junior Inventory survey can yield for establishing or evaluating a school guidance program.

Form S of the inventory, published in 1957, is the latest edition and the one used in this study. It is a self-rating device that describes adjustment in terms of pupils' problems. The authors of the instrument base their claims for its validity on its content. They write: "It is possible to demonstrate that the items included in such a checklist constitute an adequate and representative sample of the psychological domain the inventory is intended to cover."

But the authors admit that it is difficult to obtain empirical evidence that children's responses actually do represent their true

feelings. They suggest that this aspect of the validity of the content must be assumed. In the directions for administering the inventory in the manual, the examiner is instructed to emphasize the fact that it is to the pupil's own interest to answer the inventory honestly, that there are no right or wrong answers, and that an answer is right only if it tells how the child really feels (4).

The fifth-grader has been described as frank and honest about basic things, and continually seeking information about his needs and problems (6). These characteristics suggest that the fifth grade is the best level for obtaining a true expression of feeling from a child who is marking a problem check list like the one used in this study.

The fifth-graders of the norm group in this study were predominantly from schools that use the self-contained classroom type of organization. The publishers of the test, who co-operated in the study, furnished information to establish the fact that about 95 per cent of the pupils whose scores were used to construct the national norms for the fifth grade on the Junior Inventory were selected from schools that use the self-contained classroom organization. The group was made up of six hundred fifth-graders, three hundred boys and three hundred girls, selected from twenty-seven schools from all sections of the country. Small, medium-sized, and large schools were included in the sample design. In the selection of the sample, efforts were made to control the variables of urban-rural status and socioeconomic status. Although these variables were not explicitly included, school communities were chosen that would adequately represent these groups.

The decision was made to use the whole population of semi-departmental fifth-graders in Tulsa, since an entire population is more acceptable than a random sample, provided the size of the population is reasonable and does not present the more complicated problems of construction involved in a random sample.

The semi-departmental population consisted of all fifth-graders in the Tulsa public schools who met two conditions:

- First, the fifth-graders chosen must have been in the Tulsa public schools in all the grades from the first to and including the fifth.

- Second, these same fifth-graders must have been in the semi-departmental type of school organization defined in the study during all five grades.

A larger sample could have been obtained by including children who had not been in the semi-departmental organization in Tulsa during the first grade only, but as much weight as possible was given to the semi-departmental factor by using the two criteria stated.

The survey of the Tulsa elementary schools revealed that there were 831 fifth-graders, 408 boys and 423 girls, who met the criteria. The survey further revealed that it would be impossible to set up a control group of fifth-graders in self-contained classrooms in Tulsa, since only two small schools, representing about forty fifth-grade pupils, use the self-contained classroom organization. The semi-departmental population finally included pupils from forty-one elementary schools, which represented schools of all sizes and sections and socioeconomic groups of the Tulsa School District.

Since a whole population was used in the study, no attempt was made to control the socioeconomic factor. Our main purpose was to evaluate the effect of the semi-departmental system on the adjustment of elementary-school children. Nevertheless, the socioeconomic factor was not overlooked.

The Research Department of the Tulsa Metropolitan Area Planning Commission recently completed a comprehensive study on the residential land needs of Tulsa. As part of the study, the average family income for every neighborhood in Tulsa was computed. The information was used in the present study to estimate the importance of the socioeconomic factor in the results.

The method used by the Planning Commission placed school communities with average family incomes of over ten thousand dollars in the high socioeconomic group, school communities with average family incomes of between five thousand dollars and ten thousand dollars in the middle socioeconomic

group, and school communities with average family incomes of under five thousand dollars in the low socioeconomic group (5).

The results of the survey showed that twenty-two of the forty-one Tulsa schools used in the sample and 47 per cent of the pupils were from the low socioeconomic group; fourteen of the schools and 44 per cent of the pupils were from the middle group; and five of the schools and 9 per cent of the pupils were from the high group. This distribution can be explained by the fact that most schools in the low socioeconomic classification have all grades in the semi-departmental organization, whereas the larger schools in the high socioeconomic group did not, until the last year or two, include Grade 1 in their semi-departmental organization.

The results shown by Tulsa semi-departmental fifth-graders in the testing for this study must be attributed in large measure to the high adjustment scores made by pupils in the low socioeconomic group. At least in this particular evaluation, the contention should not be made that the good social adjustment shown by Tulsa semi-departmental fifth-grade pupils is attributable to the fact that a large number of pupils from the high socioeconomic class took the test.

The Junior Inventory—Form S was administered to the Tulsa fifth-graders under the direction of the Testing Department of the Tulsa public schools. The principals and the assistant principals who administered the inventory were briefed on the best procedure to follow, as outlined in the inventory manual. Except for a few makeups, the inventory was administered during November and December, 1958.

All feasible statistical methods and procedures were used in comparing the adjustment of the Tulsa semi-departmental fifth-graders with the adjustment of the fifth-graders of the self-contained classroom norm group. Statistical comparisons of the two groups on the basis of mean and decile scores were made. In these comparisons, boys were compared with boys, girls with girls, and total group with total group. In all areas, the semi-departmental fifth-graders showed higher levels of adjustment as measured by the inventory.

χ^2 significance tests were run for both semi-departmental fifth-grade boys and girls in each of the five areas of the Junior Inventory: "School," "Home," "Myself," "People," and "Things in General." In each instance, the null hypothesis was rejected at the .01 level of confidence, indicating significantly higher levels of adjustment for the semi-departmental pupils than for the self-contained classroom pupils of the norm group in each of the five parts of the inventory.

On the basis of the findings of this study as outlined here and on the basis of test results as measured by the inventory, it may be stated that:

- 1) The Tulsa semi-departmental fifth-graders showed better adjustment as measured by the problems identified than the self-contained classroom fifth-graders of the norm group as evidenced by the uniformity of the sign of differences in all the comparisons made.

- 2) The better adjustment on the part of the Tulsa semi-departmental pupils was most noticeable in the "School" area, although the null hypothesis of equal adjustment of the two groups was rejected at the .01 level of confidence in all five areas of the inventory. The study revealed the fact that the obtained χ^2 values for both boys and girls from the significance tests were considerably larger in the "School" area than the values obtained in the other areas.

- 3) Since no evidence of adjustment inferior to that of the self-contained classroom norm group was found, the semi-departmental type of elementary-school organization must not in itself promote poor adjustment in school children.

- 4) The semi-departmental fifth-grade girls showed better adjustment than the semi-departmental fifth-grade boys. Practically all mean and decile scores of the girls indicated better adjustment in most areas of the inventory.

A search of the professional literature and research on the subject indicates that this is the first comparative study of the adjustment of pupils to the semi-departmental and to the self-contained classroom types of elementary-school organization. This fact suggests that more research is vitally needed in this area.

In recent years, most research studies of pupil adjustment and most test instruments have been concerned with the secondary-school level. To show concern at this point is like locking the door after all the household valuables have been stolen. Surely, adjustment difficulties, like reading difficulties, must be identified in the elementary school. Although this study is not conclusive, it is a beginning and indicates some directions for related research. A follow-up study is now under way as part of a plan of continuous research in the Tulsa public schools.

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Study on the Use of Special Teachers of Science and Mathematics in Grades 5 and 6

E. Glenadine Gibb and Dorothy C. Matala

Throughout the history of the American elementary school, there has been a continuing effort to seek types of curricular organization that would provide the most effective education for elementary school children. Usually, effectiveness has been determined by academic achievement, by social adjustment, and by school relations. Generally, two kinds of organization have been used: (1) the one-teacher plan, commonly known as the self-contained classroom, and (2) the several-teacher plan, or a variation of the departmentalized plan, or the platoon system.

ONE-TEACHER PLAN

In the first plan, one teacher is responsible for guiding the development of concepts and skills in all subject areas for a particular age level, commonly identified by grades, such as Grade 1, Grade 3, Grade 6, etc. Advocates of this plan have noted the flexibility it allows for planning the day-by-day schedule, the opportunities it gives for the integration of experiences, the correlation of different subject matter, and the special attention that can be given to growth, development, and guidance of each child in the class. "The teacher in a self-contained classroom has more opportunity to individualize instruction during the time

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[The authors were] also assisted by members of the Departments of Mathematics and Science, State College of Iowa.

allotted and to encourage each student to move ahead."¹ Although there may be special teachers for one or more subjects, such as art, music, and/or physical education, the organization is considered to be primarily that of a self-contained classroom.

SEVERAL-TEACHER PLAN

Throughout the years it has not ordinarily been possible to provide adequate preparation of teachers in each subject area of the elementary school. To overcome this limitation, there have been advocates of the use of several teachers with each teacher being responsible for one or a group of subjects in the elementary school curriculum. Such a plan enables each teacher to become more competent in fewer teaching areas and to do a better job of teaching in those particular areas. Thus, teachers are thought to be more competent to individualize instruction; that is, they can help a child to move ahead at the level of ideas, an objective not always attained in the self-contained classroom. They know better the finer approaches to teaching a specific area. They also know the psychological aspects of learning that are unique to that area. Such knowledge enables them to plan more effective learning experiences particularly in areas where conceptual aspects of a subject must be considered as a continuous development throughout the school program.

Although some of the flexibility and integration of the school program may be lost, staffs who have used this plan have been able to minimize this difficulty. At worst, it appears to be no more serious than what happens when a teacher in the other plan of organization teaches primarily in areas he likes and skips the rest. In the words of one child evaluating the two programs, "Last year Mrs.—— was our teacher. She taught all subjects but she likes math so we had a lot of math. This year she is our special math teacher and can be in our class only a short time. This makes it possible for us to learn about other things too, like social studies."

In brief, the organization of a school may be dependent upon the job to be done and the competencies of a staff to do it.

¹Edith Roach Snyder, Editor, *The Self-Contained Classroom*, Association for Supervision and Curriculum Development, 1960, page 3.

ELEMENTARY SCHOOL SCIENCE AND MATHEMATICS

Is there anything unique in the teaching of science or mathematics in the elementary school that indicates the more desirable of these two types of classroom organization? Differences in the effect of the use of special teachers in science and in mathematics might be expected because of differences between the two subjects as to: (1) the traditional place of each in the curriculum of the elementary school; (2) the prevailing attitudes of the public toward the "values" of the two subjects; and (3) the teachers' attitudes toward the teaching of the two subjects.

A) Science. Unlike arithmetic, science (even when it was known as nature study) has never had an accepted, undisputed place in the curriculum of the elementary school. The kind and amount of science taught has been largely a reflection of the interest of the individual teacher. Even in school systems where elementary science curricula have been prepared, teachers have often allowed science time to be used for other things or have let the science lessons become additional reading lessons.

Until quite recently science has not been considered one of the subjects necessary for elementary children. It had no "practical" application as did arithmetic. Beyond this, the desirable sequence of learnings in science has been so poorly developed and difficult to establish that there has been no unifying basic pattern upon which science programs could be built. In addition, many secondary school and college teachers of science have felt that it is unnecessary to begin a science program in the elementary schools.

Because science has not been a traditionally accepted part of the elementary school curriculum, adequate preparation for teaching has not been a part of the traditional program for training elementary teachers. Many teachers feel very inadequate and ill-at-ease when confronted with the teaching of science. These feelings have increased in recent years as the teachers are confronted with more and more questions on science from elementary school children and with more and more pressure to "do something about science."

B) Elementary school mathematics. Since the beginning of elementary school education, arithmetic has been one of the basic

subjects of the school curriculum. Yet, the purpose of learning arithmetic has changed through the years. Before any suggestions for classroom organization within a school can be made, it is necessary to ask, "What goals do we wish to achieve in elementary school mathematics?" For example, (1) are we concerned only with helping children to become skillful in using the tools of arithmetic for purposes of computation? Or, (2) are we concerned with helping children to develop an understanding of certain techniques of computation as well as with becoming skillful in using them? Or, (3) are we concerned with helping children to develop not only an understanding of techniques and skills of computation, but also an intuitive grasp of certain all-pervading mathematical ideas? It seems that this decision should be made prior to decisions about the best classroom organization for a particular school system.

Suppose that the concern is only with helping children to become skillful in using the tools of arithmetic for purposes of computation. Then, it would seem that this objective could be accomplished by any method of classroom organization. With a good set of charted course materials, a child might achieve this objective on his own. But suppose the concern is with the development of an understanding of rules for computation. If this goal is to be achieved at an optimum level, teachers must use an approach to teaching other than the "explain-tell-practice-drill" method commonly used. More careful preparation of the materials to be used by the children and more than just following line by line the development even in the best of textbooks are necessary.

Further, suppose in the spirit of the 1960's, the emphasis is not only on techniques of computation with proper attention both to understanding and to skill, but also on the intuitive development of mathematical ideas. And, suppose that the spirit of discovery is to be encouraged in implementing these objectives. Elementary teachers must themselves have sufficient understanding of the mathematical foundations of arithmetic to select effective experiences to guide children toward the development of mathematical ideas by means of a discovery approach. This, of course, is possible under either plan of classroom organization. A limiting factor is the amount of education one can expect of an

individual teacher. Is it possible for one teacher to acquire the depth of mathematical understanding and the pedagogical skill necessary to teach mathematics, and at the same time be similarly competent in all the other subject areas of the elementary school curriculum?

Since the concern has traditionally been more with computation than with the recently recognized objectives in arithmetic, and since teachers' own backgrounds have been strong in the computational aspects of mathematics, it is understandable that special teachers have been more popular in science than in mathematics. Teachers feel capable of teaching arithmetic but are usually happy to have someone else teach science. This has been especially true for schools that have a science room.

SURVEYS OF EXISTING PRACTICES

Several surveys have been made in the past fifty years or so to determine existing practices in elementary school classroom organization and to note trends in practice (1, 6, 10, 12, 19).² From a study of the results of these surveys it seems that there has been much fluctuation of organizational policy in the elementary schools in the United States. Dunn's study (1) indicated that the one-teacher classroom organization has predominated since 1920 and that this method has gained in practice since 1940 as a means of securing greater flexibility in the daily program. This same study also concludes that the proponents of each organization maintain that each is best for similar values—discipline, variety of method and experience, teacher responsibility, and better learning experience. Such findings suggest that good teachers have succeeded under both systems and that perhaps a sound educational philosophy, based on provision for continuous mental, physical, social, and emotional growth of children, finds expression in either plan. Among schools that have dropped a highly departmentalized organization in favor of the self-contained classroom is Dearborn, Michigan (7). At the same time, Tulsa, Oklahoma (8), has developed a semi-departmentalized system, whereby reading, writing, arithmetic, language arts,

² These numerals refer to the bibliographical references given at the end of the report.

health, safety, and social studies are taught by one teacher; and, art, music, science, geography, physical education, speech, and library are taught by several teachers in specially equipped rooms.

COMPARATIVE STUDIES

In addition to this index of present practice and opinion, as described above, there have been efforts to make comparative studies of these two kinds of organization. Two studies have been reported by Otto (9, 11), one in 1923, which showed that children made higher achievement scores under the single-teacher plan in grades 5 to 8 inclusive, and the other made in 1930, which showed that departmentalization is as effective in grades 4, 5, and 6 as the one-teacher-per-grade plan. Several studies have shown that academic achievement of children in the platoon schools is comparable to achievement of children in other types of schools (2, 4, 14, 16, 18).

McCue (5) found that a semi-special teacher plan of organization was more effective in developing growth in social adjustment and school relations. Tests indicated that growth in total adjustment was significantly greater for this group than for those in the one-teacher plan of organization.

Rankin (13) noted that growth and development is most likely to come when teachers know children well and can thus guide their growth.

Stoddard (17) in describing the use of the Dual Progress Plan in Long Beach and Ossining, reported that during the first two years of the study there was no distinct advantage in the dual progress plan over the unitary plan.

A STUDY OF THE USE OF SPECIAL TEACHERS

If we expect to teach more of arithmetic than the understanding of techniques and the attainment of skills in computation, and if we expect to begin development of science concepts in the elementary school, we need teachers who know not only how to teach, but also what to teach, children. Teachers must have an understanding of mathematical and scientific ideas if

they are to select intelligently experiences that will make possible the achieving of these objectives.

It was the intent of this study³ to make possible the answering of several questions. Among those questions are the following:

a) Can science and mathematics each be taught more effectively by special teachers (several-teacher plan) than by the regular classroom teacher (one-teacher plan)?

b) If science and mathematics are better taught by special teachers, do we have any indication of the shortcomings of this approach for the total elementary curriculum and the education of the elementary school child?

c) Can science and mathematics each be taught more effectively to children of high intellectual ability by special teachers than by one teacher?

d) Can science and mathematics each be taught more effectively to children of low intellectual ability by special teachers than by one teacher?

PLAN OF STUDY

Four school systems were selected from those that were interested in participating in this study. The selection was made in such a way that different kinds of school systems were represented.

In each of these systems, four fifth-grade classes and four sixth-grade classes with similar socioeconomic background and intellectual ability were selected. Four classes, two fifth and two sixth grade, were designated to be taught all subject areas by one teacher, with the possible exception of music, art, and physical education. Four other classes, two fifth and two sixth grade, were designated to be taught mathematics and science each by special teachers. These so-called special teachers were special in the sense of being assigned to the category by the administration, contingent upon their interest in participating in the study in such

³ Three other studies, made or being made, are related to this particular study. They include: (1) *The Use of Special Teachers for Different Socio-Economic Levels*—Washington, D.C.; (2) *The Use of the Consultant*—State College of Iowa; (3) *The Effect of Special Teachers in Science and Math for Continued Years in School Science and Mathematics Longitudinal study*—Lansing, Michigan.

TABLE 1
Average (Mean) Number of Semester Hours* Per Teacher
(To Nearest 0.5 Hour)

Classification of Teachers	Content		Methods	
	Science	Math	Science	Math
1) Special Teachers of				
(a) Science	22.0	5.0	4.5	4.0
(b) Mathematics	12.0	4.0	4.0	4.5
2) Teachers in Self-Contained Classrooms	10.5	1.5	2.0	2.5

* This includes both graduate and undergraduate work.

a role. Common criteria of background and proficiency were not used by every system in making assignments.

Preparation in mathematics and science by number of course hours in both content and methods for teachers participating in the study is presented in Table 1. The range of hours for each group is given in Table 2.

Each teacher in a self-contained classroom was asked to express his preference if he were to select one teaching field in the elementary school curriculum. Three could make no specific choice. First choices of the thirteen teachers responding are given in Table 3. Not all teachers indicated a second and a third choice.

EVALUATION PROCEDURES

The sample for this study consisted of three sets of four classes from each of the four school systems. These systems will be called A, B, C, D, throughout this report. One set of four classes within each system participated in the study for a two-year

TABLE 2
Range of Semester Hours within Each Group

Classification of Teachers	Content		Methods	
	Science	Math	Science	Math
1) Special Teachers of				
(a) Science	4-48	0-9	0-11	0-11
(b) Mathematics	6-16	0-8	0-12	3- 6
2) Teachers in Self-Contained Classrooms	0-23	0-6	0- 8	0- 6

TABLE 3
Subject Preference of Teachers in Self-Contained Classrooms

Subject	Number of Responses		
	1st	2nd	3rd
Mathematics	3	2	3
Science	3	2	0
Social Studies	4	1	1
Reading—Language Arts	3	2	1
No choice	3	0	0

period (1959–1961), a second set of four sixth-grade classes for one year (1959–1960), and a third set of four fifth-grade classes for one year (1960–1961).

At the beginning and at the close of each of the two school years, three tests were given to measure concepts, abilities and skills in social studies, in science, and in mathematics.⁴ A social studies test was given in order to get some measure of what happened in other phases of the curriculum in a study primarily concerned with science and mathematics.

An interest inventory⁵ was also given at these times. Too, at the beginning of each year an intelligence test⁶ was given to those children participating in the study for the first time.

The intelligence test and the measures obtained from the subject-matter tests were used to determine whether or not children selected from each system to participate in the study were from the same population as measured by abilities in subject areas named and in intellectual ability.

There was no cause to reject⁷ the basic assumption that children selected to participate in the study in either the several-teacher plan or the one-teacher plan were samples from the same population of intellectual ability and knowledge of social studies

⁴ Tests used were the Sequential Tests of Educational Progress (Forms IV and III), in Science (Forms IV and III), and in Social Studies (Form IV).

⁵ Interest test used was What I like To Do (An Inventory of Children's Interest) and a test designed for purposes of this study to gain some insights into interest and attitudes for both science and mathematics.

⁶ The Otis Quick-Scoring Mental Ability Test (Beta) was used.

⁷ The 5% level of confidence was used as the criteria for rejecting these hypotheses.

within each system. The children in Systems C and D were selected from the same population of ability in science and mathematics. The children in Systems A and B were not, however, selected from the same population of ability in mathematics. Children in System A were from different populations in science and mathematics. Those assigned to be in self-contained classrooms had greater ability in these subject areas than those assigned to the classes of several teachers. In System B, although children were from the same population in science and social studies abilities, they were from different populations of mathematics ability. Those children assigned to classes of several teachers were of higher ability than were those assigned to the classes taught by one teacher.

Gain scores were then used to measure change in ability during the two-year period for the one group and during the one-year period for each of the other two groups. For these analyses unadjusted gain scores in each of the three subjects for fifteen children⁸ randomly selected from each of the participating classes were used. These were obtained from the pre-test given at the beginning of the program for each child and from the test given at the close of the program for each child.

At the beginning of the second year of the study, eight children were selected from each of the eight classes participating in the study during that year, for purposes of individual interviews with the evaluators. These interviews were so structured as to reveal something about children's preferences for classroom organization and school subjects, about their attitudes toward science and mathematics, and for their abilities to solve problems in either science or mathematics. Of these eight, four children were interviewed for particular questions in science and four children were interviewed for particular questions in mathematics.

During the two-year period, each teacher participating in the study kept a log of daily activities in teaching science and/or mathematics. These teachers and the non-participating teachers whose children were taught science and mathematics by special teachers were also interviewed at the close of the year for possible

⁸ This made possible an analysis within classes rather than using an unweighted class mean.

information which might better enable the evaluators to interpret the results of the findings.

ANALYSIS OF TEST AND INTERVIEW DATA

It will be recalled that one group of children participated in the study for two years. Two other groups of children participated in the study for one year each.

RESULTS OF TESTING

Gain scores for fifteen children from each of these (48) classes were used in testing null hypotheses regarding the effects of classroom organization upon change in interest and in ability in science, mathematics, and social studies. Thus, gain scores made by two hundred forty children in each of three groups were subjected to analysis of variance techniques to test the following null hypotheses:

A) There was no difference for the total group in the attainment of understandings in science, in mathematics, and in social studies regardless of the nature of the classroom organization (1) in 5th grade, (2) in 6th grade, and (3) for a separate sample measured over the 5th and 6th years combined.

B) Within systems there was no difference between classes, regardless of the nature of organization, in attainment of understanding in science, in mathematics, and in social studies, as measured for the two-year group.

C) The method of organization made no difference in attainment in science, in mathematics, and in social studies at different levels of intellectual ability as measured for the two-year group.

Following is a summary of the tests of these null hypotheses based on the five per cent level of confidence for rejection of the null hypothesis.

Summary of Tests for Null Hypothesis A

Group	Science	Mathematics	Social Studies
Two-year group	Rejected	Not rejected	Not rejected
5th grade (1 year)	Not rejected	Not rejected	Rejected
6th grade (1 year)	Rejected	Not rejected	Not rejected

Summary of Tests for Null Hypothesis B

School	Science	Mathematics	Social Studies
System A	Not rejected	Not rejected	Not rejected
System B	Rejected	Not rejected	Not rejected
System C	Rejected	Not rejected	Not rejected
System D	Not rejected	Not rejected	Not rejected

Some impression of the inconsistency in the data may be obtained from Figures I, II, and III. Little feeling for the magnitude of difference necessary for significance can be conveyed, and no graphs of performance by ability levels are included.

The sample for testing null hypothesis C was drawn in the following manner. Since the mean I.Q. for the total sample (two-year group) was 106, the standard deviation of 11 was arbitrarily selected from the range reported for the Otis Beta Test. Analyses comparing the gains made by children of I.Q. of 95 or less and 117 and up were made. These limits for identifying high and low intellectual ability groups allowed the selection of 22 cases in each organizational method for the high group and the low group. The test for Hypothesis C was based on these gains.

Analysis of variance techniques were used to test the null hypothesis that there were no differences in gain scores for mathematics, science, and social studies for different methods of classroom organization and for levels of ability. Also, a third part of this general hypothesis (that is, that one kind of organization was not particularly appropriate for one level of ability) was tested since this would then make possible answering such a question as: Are several teachers better for higher ability children studying science but worse for lower ability children studying the same subject?

None of the nine hypotheses was rejected. However, general tendencies can be observed in the following table.

Summary of Data for Null Hypothesis Concerning
Pupil Mean Gain Classified for Ability Level and Organization

Classification	I.Q.	Mathematics	Science	Social Studies
Upper Ability—Several Teachers	123	13.86	12.18	14.77
Upper Ability—One Teacher	122	13.82	9.18	12.68
Lower Ability—Several Teachers	91	14.73	13.45	10.59
Lower Ability—One Teacher	91	15.86	12.14	13.63

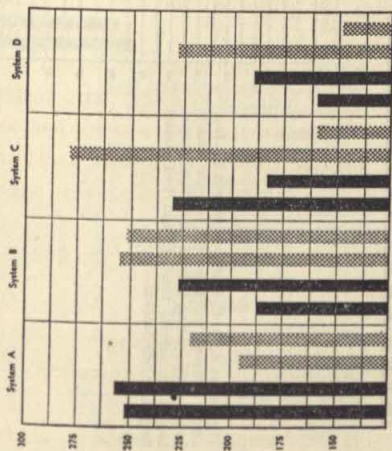
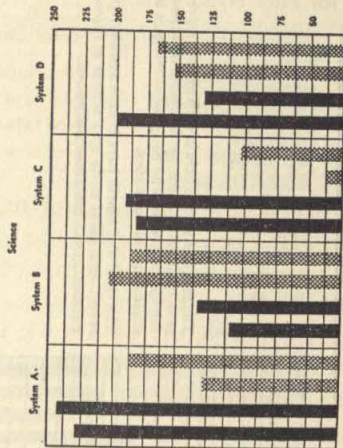
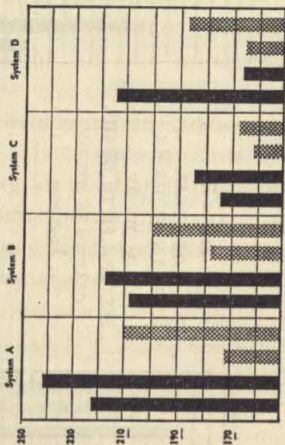


FIGURE I
TWO-YEAR
GAIN SCORES
MADE BY
SIXTEEN CLASSES
PARTICIPATING IN
STUDY
1959-1961



Social Science



The letters A, B, C, and D represent the four school systems participating in the study. Each participating school had two classes taught by several teachers and two classes taught by one teacher.

The first and second bars in each system represent total gains made by a sample of fifteen children in classes who had special teachers in science and mathematics.

The third and fourth bars in each system represent total gains made by a sample of fifteen children in self-contained classrooms.

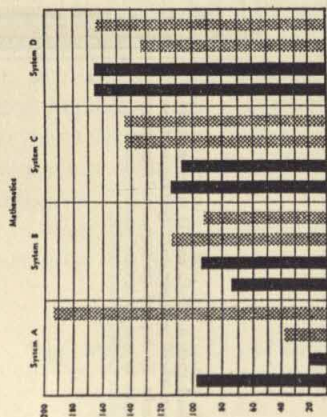
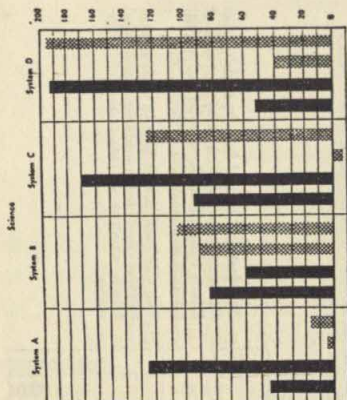
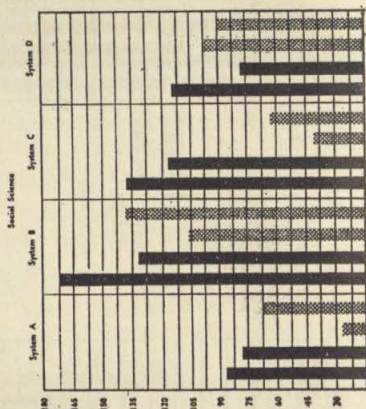


FIGURE II
ONE-YEAR
GAIN SCORES
MADE BY
SIXTEEN FIFTH GRADE
CLASSES IN STUDY
1960-1961



The letters A, B, C, and D represent the four school systems participating in the study. Each participating school had two classes taught by several teachers and two classes taught by one teacher.



The first and second bars in each system represent total gains made by a sample of fifteen children in classes who had special teachers in science and mathematics.

The third and fourth bars in each system represent total gains made by a sample of fifteen children in self-contained classrooms.

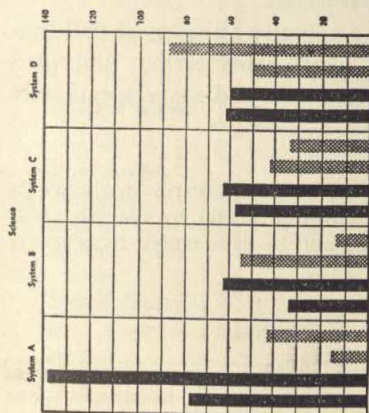
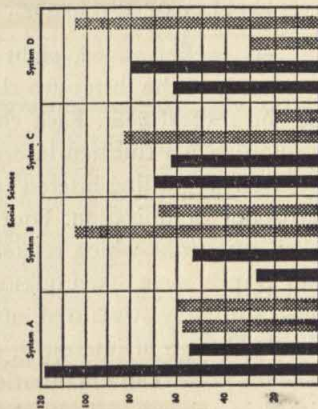
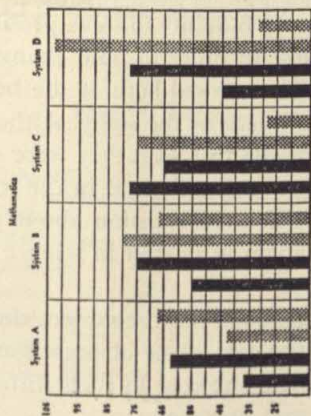


FIGURE III
ONE-YEAR
GAIN SCORES
MADE BY
SIXTEEN SIXTH GRADE
CLASSES PARTICIPATING IN
STUDY 1959-1960



The letters A, B, C, and D represent the four school systems participating in the study. Each participating school had two classes taught by several teachers and two classes taught by one teacher.

The first and second bars in each system represent total gains made by a sample of fifteen children in classes who had special teachers in science and mathematics.

The third and fourth bars in each system represent total gains made by a sample of fifteen children in self-contained classrooms.

The null hypothesis was not rejected.

Much has been said about the negative attitudes of children toward arithmetic. Two written instruments earlier described were used to measure changes in attitude and more specifically to test the null hypothesis:

D. There is no difference in attitude towards mathematics and science between groups of children taught by special teachers in science and in mathematics and by those taught by teachers in self-contained classrooms.

This hypothesis was not rejected.

RESULTS OF INTERVIEWS.

As earlier stated, eight children were selected at random from each of the thirty-two classes participating in the study during the second year. Each child was interviewed by one of the evaluators. All children interviewed were asked the same general questions regarding interest in school subjects and preference for classroom organization. Four pupils from each class were then asked questions which related specifically to science. The other four pupils were asked questions about mathematics. Each interview, similarly structured, attempted to get information regarding (1) change of interest in science and mathematics, (2) preference for classroom organization, and (3) ability to solve problems either in science or in mathematics. In order to note change of behavior, the same children were interviewed both at the beginning and at the close of the second year of the study. Although interviews were made at the end of the first year, they were used primarily to explore the usefulness of this technique in the study.

The following Tables 4-7 present information about preferences for school subjects and changes in interest in science and in mathematics.

Tables 4 and 5 present the results of favorite-subject choices as given by those taught under the two plans of organization. Some children gave multiple favorite subjects. In such instances each subject named was recorded as a first choice.

Since the same children were interviewed both in the fall and spring, observations were made of change in attitude toward

TABLE 4
Favorite Subjects Named by Children in Two-Year Group

School Subject	Several Teachers		One Teacher	
	Fall	Spring	Fall	Spring
Science	13	22	13	18
Social Studies	5	11	6	5
Arithmetic	29	25	19	24
Spelling	2	3	6	8
English	0	3	1	0
Reading	7	5	7	7
Physical Education	0	4	3	2
Art	11	3	7	9
Health	0	0	2	2
Music	6	3	0	1
Undecided	6	4	5	3

mathematics and science. Table 6 presents totals of eight ratings given by eight children in each system. This rating was based on a four-point scale where a negative attitude was associated with zero and a highly favorable attitude with four. The first column (F) presents ratings given in September, 1959, and the second column (S) presents ratings given in May, 1962.

Although there is a difference in total scores, there is no significant difference in change of interest in science or in mathematics due to one or the other type of classroom organization.

TABLE 5
Favorite Subjects Named by Children in Grade 5

School Subject	Several Teachers		One Teacher	
	Fall	Spring	Fall	Spring
Science	19	18	11	11
Social Studies	8	12	8	9
Arithmetic	25	24	17	22
Spelling	6	5	14	14
English	2	1	2	4
Reading	5	4	5	3
Physical Education	2	2	3	4
Art	12	7	10	6
Health	0	1	0	0
Music	1	1	1	1
Undecided	6	2	3	3

TABLE 6

Changing Interests in Science and Mathematics in Two-Year Group

School	Science				Mathematics			
	Several		One		Several		One	
	F	S	F	S	F	S	F	S
System A	23	23	12	16	23	22	20	19
System B	21	20	15	19	28	21	24	25
System C	20	26	18	24	26	26	20	20
System D	22	27	25	28	25	21	24	20
Total	86	96	70	87	103	90	88	84

Children were asked also to state their preference for classroom organization. These responses were rated on a 0 to 2 scale where 2 was associated with preferences for several teachers; 1 with indecision; and 0 with preference for one teacher. Analysis of variance techniques were again used to test the null hypothesis that there was no difference for preference of organization. This hypothesis was rejected. The F ratio exceeded that necessary for the rejection of the hypothesis at the one per cent level. The difference favored the several-teacher method. Also, this analysis as presented in Table 8 made possible the testing of null hypotheses regarding preference for classroom organization between grades and within system.

From the results of these analyses, it appears that for similar populations children in sixth grade may be more inclined to favor several teachers than do children in fifth grade and that the or-

TABLE 7

Changing Interests in Science and Mathematics for Grade 5

School	Science				Mathematics			
	Several		One		Several		One	
	F	S	F	S	F	S	F	S
System A	19	33	21	20	19	20	16	15
System B	23	19	21	24	23	29	23	29
System C	19	27	24	26	20	19	24	21
System D	23	24	19	16	25	23	14	19
Total	84	103	85	86	87	91	77	84

TABLE 8
Analysis of Variance—Children's Preferences
for Classroom Organization

Source	df	Sums of Squares	Mean Square	F	Hypothesis
Between Organizations	1	42.24	42.24	70.40	Rejected
Between Grades	1	5.06	5.06	8.43	Rejected
Between Systems	3	9.13	3.04	5.07	Rejected
Error	250	151.01	0.60		
Total	225	207.44			

ganization of special teachers is not preferred in all school systems with the same degree of enthusiasm. Children were also asked to state reasons for their preferences.

Some of the reasons⁹ reported by the children who preferred several teachers are:

- 1) Seems easier.
- 2) Get to know more people.
- 3) Better prepared for high school.
- 4) It is not so monotonous. Each teacher has a different way.
- 5) Learn more that way. One teacher may not know all about one subject.
- 6) Just like it.
- 7) Class gets restless with one teacher.
- 8) Get tired of listening to one teacher all the time.
- 9) Certainly you can't get all of them mad at you on the same day.

The following reasons were given by those preferring one teacher:

- 1) Easier to listen to one teacher.
- 2) Just like one teacher.
- 3) Don't have homework.
- 4) Don't like to switch around.
- 5) Get more out of one teacher. I have had several teachers.

There were those who could not state a preference for these reasons:

⁹ These reasons are not listed in order of frequency. They only indicate the variation of reasons given.

- 1) Depends upon the teachers.
- 2) Don't know. Haven't had both kinds.
- 3) Never thought about it before.

The final task in the interview provided each child with a set of problems either in mathematics or science. These problems were designed for purposes of measuring a child's ability to use his knowledge and insight. Analysis of variance techniques were used to test the null hypothesis:

There is no difference in problem-solving success attributable to a particular kind of classroom organization.

This hypothesis was not rejected for science or for mathematics in Grade 5. However, it was rejected for mathematics by children in the study for two years. Children having several teachers were better able to solve problems as presented in the interviews than were those having one teacher.

Tables 9 and 10 present the total raw scores attained by each set of eight children from each of the four systems. The highest possible score in mathematics for each group was 96. The highest possible score in science for each group was 64.

TABLE 9
Results of Two-Year Group in Solving Problems

School	Mathematics		Science	
	Several	One	Several	One
System A	59	50	30	27
System B	52	32	19	20
System C	39	31	28	24
System D	51	46	23	22
Total	201	159	100	93

Briefly, let us summarize the findings from the tests and interviews:

1) Regardless of the number of years of participation in the study (one year or two years) there was no significant difference in gains made in mathematics as measured by the Sequential

TABLE 10
Results of Fifth Grade in Solving Problems

School	Mathematics		Science	
	Several	One	Several	One
System A	39	63	20	18
System B	52	33	17	22
System C	32	23	20	28
System D	41	46	11	17
Total	164	165	68	85

Tests of Educational Progress between children taught by one teacher and those taught by several teachers.

2) For children participating in the study for two years and for the single year sixth grade, there was a significant difference in gains made in science as measured by the Sequential Test of Educational Progress between children taught by one teacher and those taught by several teachers. Children taught by special teachers made significantly greater gains.

3) Although the one-year fifth grade children having several teachers made significantly greater gains in social studies than those having one teacher, this was not true for children participating in the study for the two years or for the one-year sixth grade.

4) There is no evidence that special teachers created a biased interest in the selected content areas of mathematics or science.

5) There was a significant preference among children for several teachers. Furthermore, children in sixth grade favored several teachers to a significantly greater extent than did fifth-grade children. Also, some systems as a whole favored several teachers while other systems favored one teacher.

6) Classroom organization had little relationship to children's performance in solving problems in the interviews. For Grade 6, children taught by special teachers achieved higher success in both science and mathematics than did those children taught by one teacher. For mathematics this difference could not be attributed to chance. For Grade 5, children taught by one teacher achieved higher success in both mathematics and science.

Although this difference was much greater for science than for mathematics the difference could be attributed to chance.

CONCLUSIONS

1) There is some evidence that children learn science more effectively with special teachers than in a self-contained classroom.

2) There is no evidence that children learn mathematics more effectively with special teachers than in self-contained classrooms; neither is there evidence that children learn mathematics more effectively in self-contained classrooms than when taught by special teachers.

3) There is no reason to believe that several teachers create a biased interest in selected content areas such as science and mathematics.

4) Using a special teacher in science is probably a better kind of organization for more effective learning by all children regardless of intellectual ability.

5) There is no reason to believe that children of different intellectual abilities achieve more effectively in mathematics under one plan or the other.

6) Although both fifth- and sixth-grade groups preferred the several-teacher organization, the more enthusiastic preference was on the part of the sixth grade. However, children prefer different kinds of classroom organization for different reasons.

SOME OBSERVATIONS AND THEIR IMPLICATIONS

The following statements summarize observations made during visits into classrooms from conversations with teachers, children, and administrative staffs of schools, and from an examination of reports by teachers of classroom activities.

1) Having special teachers in science and mathematics did not seem to place a handicap on the total school program. In fact, there were indications that children do better in social studies under a several-teacher organization than under a one-teacher organization. Especially was this true for children of higher ability. Children of low ability seemed more successful in social studies in one-teacher classrooms.

2) The background of the teacher not only in content but also in elementary school education may be a more significant factor in developing concepts of mathematics and science than classroom organization alone. From study of logs and visitations with teachers, it would seem that teachers who were competent in subject matter and who had an understanding of children, their interests, and how they learn were the most successful teachers. For example, the special science teacher in System A illustrates this competency. Also, the second self-contained classroom in mathematics for fifth grade in System A (1960-1961) illustrates the result of this kind of background or interest in mathematics for a teacher in a self-contained classroom.

3) Selection of effective learning experiences plays an important part in developing ability to solve problems. Some special teachers of mathematics did use materials in the spirit of recent curricular developments designed to develop ideas as well as skills. It could well be that these materials contributed to the differences noted in solving problems during the interviews.

4) Programs which involved participation and activity on the part of children seemed to be more effective than "explain-and-show" or "read-and-talk" procedures.

5) What was known about some aspect of a subject interfered in thinking about a problem in that subject in a different context. This was particularly true for science, which may imply that our science and mathematics curricula tend to place more emphasis on the facts than on the ideas of a subject.

6) Good teachers are effective regardless of organization. This observation suggests that regardless of organization, programs for preparation of elementary teachers need to be strengthened in the areas of science and mathematics.

7) If a competent teacher of science or mathematics is available, he may be more effectively used as a special teacher for the reasons previously given.

8) A design including larger samples, better supervision of each school's adherence to the design, a uniform curricular outline, and special teachers chosen for competence in the subject to be taught, all might contribute to different or more sharply defined outcomes.

SUGGESTIONS FOR FURTHER STUDY

We recognize the many limitations of this study. These limitations along with outcomes of the study suggest further questions to be answered:

1) What would be the result if there were specific competencies required of special teachers?

2) What would be the results if there were only one special teacher for both mathematics and science? This arrangement might provide more flexibility in teaching than was possible with two special teachers.

3) To what extent could the teaching of science and mathematics be improved with the establishment of rooms adequately equipped for teaching these subjects?

4) To what extent is the selection of content and method of teaching more influential in developing understanding and problem solving abilities than the selection of a particular classroom organization?

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Does a Departmental Organization Affect Children's Adjustment?

A. Hugh Livingston

The semi-departmental plan of organization, particularly at the primary level, has stirred controversy over the years. The debate has centered on the emotional and social adjustment of the pupil. Does contact with several teachers during the day help or hinder adjustment? While a great deal of opinion has been recorded in the literature, there appears to be no objective evidence that departmentalization is harmful or helpful.

Broadhead recently reported a study of the personal and social adjustment of fifth-graders who had gone through the semi-departmentalized organization in the elementary school (1). In his study, which was conducted in the Tulsa public schools, the SRA Junior Inventory was administered to 831 fifth-graders who had experienced the semi-departmental organization in Grades 1 through 5.

In comparing the adjustment of these pupils with the adjustment of pupils from self-contained classes who comprise the norm group used in standardizing the test, Broadhead found the 831 Tulsa pupils to be superior in each of the five areas of the inventory: School, Home, Myself, People, and Things in General.

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The most significant difference between the pupils in Broadhead's study and the pupils who made up the norm group was in the School area of the inventory.

In Broadhead's study one major variable was not controlled. He incorporated no means of identifying and controlling variation in pupil adjustment that might be attributed to the nature of the community in which the pupil lived. Inasmuch as the norm group was drawn from many communities, both rural and urban, it is not tenable to attribute the differences observed primarily to the type of elementary-school organization the pupils experienced. The possibility of differences in community atmosphere and outlook and their contribution to the over-all development of children must be taken into account.

Because of certain administrative prerequisites, many pupils in the Tulsa schools do not experience the semi-departmental organization in Grades 1 and 2. An attempt was made to locate a sizable number of fifth-graders who had been in the Tulsa schools in Grades 1 through 5 but in self-contained classrooms in Grades 1 and 2. It was felt that a comparison of the adjustment of such a group with the adjustment of both the norm group and the group used by Broadhead would control the community variable.

A survey identified a total of 1,223 pupils who met the criteria set up. These children had been in the Tulsa schools in Grades 1 through 5. They had experienced the self-contained classroom organization in Grades 1 and 2 and the semi-departmental organization in Grades 3 through 5.

The forty-two schools that these pupils attended made up two-thirds of the elementary schools in the city. The schools were representative of the various social, economic, and intellectual levels in the city at large.

The principals of the forty-two schools from which the pupils were drawn were called in for a briefing session. The test and the purposes of the study were thoroughly explained, and the methods of administering the test were described in detail. Each principal was to administer the test himself, and all test forms were to be returned to the Research Department for scoring.

To analyze the results two procedures were followed. First, the frequency of pupils' scoring in each decile of the norms was compared with the expected frequency for each decile by the use of χ^2 . Next, the mean score on each of the five parts of the test was computed, and the difference between the means of the group of 1,223 pupils and the means of Broadhead's group of 831 pupils was tested for significance by the use of the t ratio.

It should be noted that the SRA Junior Inventory is an instrument designed to identify problems. The higher the number of problems a pupil identifies as being of concern to him, the higher his score on the inventory. Therefore, lower scores indicate relatively better adjustment.

The results of the χ^2 analysis of the frequency of scores showed a great deal of similarity to the results found by Broadhead. In each of the five areas of the test the resulting χ^2 was significant beyond the .01 level. The departure of the observed frequencies from the expected frequencies was most noticeable in the two lower deciles. The pupils who had been in self-contained classrooms in Grades 1 and 2 also showed evidence of better adjustment in the School area of the inventory than in the other four areas.

This evidence indicates that both Tulsa groups—the one composed of pupils who had been in the semi-departmental organization in Grades 1 through 5 and the one composed of pupils who had experienced self-contained classroom situations in Grades 1 and 2 and semi-departmental organization in Grades 3, 4, and 5—were significantly better adjusted as measured by this test than the norm group, which was composed overwhelmingly of pupils who had been in self-contained classrooms in all five grades. Inasmuch as both Tulsa groups scored more favorably than the norm group, a community influence may account for part of the difference Broadhead found.

In the second part of the analysis the mean scores of the 831 pupils in Broadhead's study were compared with the mean scores of the 1,223 pupils in each of the five areas of the test. For this comparison the t ratio was used.

Both Tulsa groups included all the pupils who met the criteria set up. And in each Tulsa group all cultural, social, eco-

TABLE 1

Test of Differences between Means on Five Areas of the SRA Junior Inventory Administered to 1,223 Pupils Who Were in Self-contained Classrooms in Grades 1 and 2 and 831 Pupils Who Were in Semi-Departmental Classes

Area of Test	Self-contained and Semi-Departmental*		Semi-Departmental† Standard		t Ratio
	Mean	Standard Deviation	Mean	Deviation	
School	29.4	17.41	25.4	17.50	4.73
Home	11.5	9.04	10.2	9.12	3.17
Myself	27.2	20.50	24.2	20.47	3.25
People	17.5	16.40	14.5	15.71	4.17
General	23.8	16.26	21.0	16.15	3.84

* Children in this group were in self-contained classrooms in Grades 1 and 2 and in semi-departmental classrooms in Grades 3 through 5.

† Children in this group were in semi-departmental classrooms in Grades 1 through 5.

nomic, and intellectual levels were represented. Therefore, the major identifiable variable not controlled in the comparison was the kind of organization for instruction the children experienced in Grades 1 through 5.

The results of the analysis by use of the *t* ratio are shown in Table 1. The pupils who had been in the semi-departmental organization in Grades 1 through 5 exhibited significantly better adjustment as shown by the lower mean scores than the pupils who had been in self-contained classrooms in Grades 1 and 2. The largest difference between the two groups was found in the School area of the inventory. All the *t* ratios were significantly beyond the .001 level.

The results of this study and the one by Broadhead, while not conclusive, indicate that the semi-departmental organization does not hinder the pupils' personal and social development. It is not reasonable to conclude at this point that semi-departmental organization leads to better adjustment on the part of elementary-school pupils. Still, the evidence reported here does indicate that the longer a pupil was exposed to this organization, the more satisfactory his adjustment as measured by this inventory.

There has been an upsurge in interest in some form of de-

partmental organization. In view of the scanty research in this area, changes toward departmental organization should be carefully considered.

Critics who have protested that the departmental organization, particularly at the primary level, threatens children's personal and social development may have to reconsider. Evidence from our research in Tulsa seems to indicate that they will have to find other grounds on which to base their criticism.

Additional research is needed to determine the effect of departmental organization on other facets of children's development. It is particularly difficult to evaluate the benefits children may derive from teachers with special training in such fields as art and music.

Here in Tulsa the purpose of our program of continuing research in our public schools is to evaluate all facets of the experience and the achievement of the children in this pattern of elementary-school organization. Study to this end is still under way.

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Some Current Proposals and Their Meaning

Arthur E. Hamalainen

Since 1950, universal military conscription, the tensions of the world situation, and the scientific advances of the Russians have brought about the formulation of certain proposals which

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clearly affect planning for integration and continuity in learning. The anxieties created by these various factors have led to a demand for a "hurry-up" process in education, an insistence that we all become linguists beginning in the kindergarten, a cry for more and better scientists, and an ultimatum to do more for the gifted child.

Such proposals take the form of adding special subjects such as foreign languages or science to the program and thus organizing the elementary school on a departmentalized plan from its simplest form to a dual or multiple track platoon system. Also, suggestions are made for homogeneous grouping and the earlier introduction of advanced work in the lower grades. These plans are presented as "new" and "tremendous strides" in education.

Forgotten is the thought that such proposals often represent a regression to procedures long discarded because they may be based upon an outmoded philosophy of education, and a mechanistic psychology of the teaching-learning process. If the same situation were to occur in the field of medicine, it would suggest that all medical doctors would turn their backs on the research of recent years and resort to bloodletting as a cure-all for their patients. In many situations where these proposals have been adopted, it is suspect that educators have done so not through conviction built on research but rather through community pressure, not through understanding of the ultimate effect of their practices upon children but rather through ignorance of the history of education and knowledge of how children learn in the light of the best evidence we have today. However, before we examine these proposals a restatement of the terms "integration" and "continuity" may be appropriate.

OBJECTIVES IN LEARNING

Integration, from both a psychological and biological approach implies the harmonious development of the individual in all aspects of his development. As process, it is the means by which the individual organizes his experiences in his own way to preserve his unity of self. We, normally, begin life as a unified, integrated personality. We spend the rest of our lives making every effort to maintain that original integration of self. Energy

is directed by the individual to maintain this wholeness of personality, and the organism resists all attempts to thwart this unity of being. So strong is this urge to be an integrated organism that efforts to divert the individual in his striving to remain a unified, integrated being may result in abnormal or irrational behavior. The individual may resort to regressive or even infantile behavior to combat the demands placed upon him which threaten his unity of personality. He may break down completely, having found no "normal" means by which he can be himself. In practical terminology this behavior takes the form of problems in school discipline, drop-outs, inattention, irrational behavior, or "misbehavior."

Continuity in the curriculum means that the individual is able to cope with problems of increasing difficulty more and more on an independent and mature level, that he is able to make more mature decisions, and that he understands the nature of himself and others and thereby develops his own self-image. "The principle of continuity of experience means that each experience both takes something from those which have gone before and modifies in some way the quality of those which come after."¹ It implies constant movement of the individual to higher levels of action. It meets the criterion of all education—that it end in action. In fact, continuity, if it means anything for the child, implies a share in the planning, the executing, the evaluation of the educative process through which he is going. Thus, what he studies has meaning for him and enables him to approach more difficult problems on a higher level with greater ease. It means concentrating on problems centered about his needs in the society in which he lives.

Based upon the philosophy of Peirce and Dewey these interpretations gained wide acceptance. The experiments of Lashely, Allee, and others, aided by the interpretations of such men as Hopkins appeared so sound that the organization of the elementary school toward the self-contained classroom became quite apparent. Departmentalization in the elementary school as reported by Otto in 1950 was definitely on the decline. He further states that "A summation of the research evidence leads to the

¹ John Dewey. *Experience and Education*. New York: The Macmillan Company, 1938, p. 27.

conclusion that no one of the claims made for departmentalization in the elementary school has been substantiated."²

DEPARTMENTALIZATION

Departmentalization disregards the fact that the individual is an organic being who cannot be farmed out piecemeal to many persons. He must be seen and reacted to as a whole being if the most effective learning is to occur. The teacher needs to observe and work with the individual in many circumstances and conditions in order that he can determine what materials and experiences the child needs for his fullest development. This is well exemplified in the films, "Skippy and the 3 R's" and "Passion for Life." To help the child maintain his essential unity and integration of self the teacher needs to know, not just one, but the many facets of his development. In addition, children learn best as they relate one to the other in the many phases of their development. Relatedness is only obtained as individuals spend extended time with other individuals in a setting in which there is freedom to interact. As the teacher thus works with groups of children over long periods of time she is able to help retain this essential unity of the organism and help children relate most effectively to each other.

One of the most obvious weaknesses of the departmentalized program is the very nature of the schedule itself. Continuity in learning is constantly interrupted, since it is impossible to pursue deep interests that have been developed in the classroom when the passing bell rings and the pupil must be in the next room within 3 or 5 minutes ready to switch his thinking to problems in an entirely different and unrelated field and setting. Impoverishment of the curriculum and the quality of experiences is evident when such rigid patterns of the curriculum are set. If learning is to be a continuous flow of experience, we defeat our very aims in attempting to segment it into specific, unrelated periods of the day under subject matter specialists. Otherwise, the individual is constantly left on a low plane of development which limits his capacity for growth and forms the basis of miseducation. The self-

² Henry Otto. *Encyclopedia of Educational Research*. New York: The Macmillan Company, 1950, p. 379-80.

contained classroom appears to offer the more satisfactory answer to meet the criteria of high quality learning experience.

A first prerequisite of effective teaching is for the teacher to know the children quite completely. This is exceedingly difficult under a departmentalized program, and impossible where a foreign language or science specialist may meet several hundred children each week for brief intervals of time. As a consequence, the teacher in the departmentalized program finds it very easy to become subject-centered in his teaching rather than being concerned with the uses of the subject to meet the needs of the children with whom he is working. This is certainly obvious in the high school, where departmentalization is most widely practiced. Here the perennial cry of administrators and of parents against the increasing amount of homework is so loud that rebellion is generally imminent. But, the teacher, knowing that in the long run he will be evaluated on the achievement of youngsters in his particular area, gives increasing amounts of homework, while the integration of the individual and the continuity of his development are lost in the process.

Those who advocate the additive process as a method of curriculum improvement point out that the teacher in the self-contained classroom cannot be expected to know all subjects equally well and is thereby tempted to emphasize only the subjects he knows or likes best. It would be unrealistic to assume that each teacher knows all subjects with equal intimacy. It is probably more reasonable to expect the teacher to have more than a superficial, broad background and also a considerable depth of knowledge in the area of human growth and development.

In the self-contained classroom the teacher is thought of as the guide and counselor, the coordinator with the children of the experiences most meaningful to them. Because of the length of time he spends with the children he has an opportunity to know individual children in the class and thus better understand their needs. Through diagnostic procedures he is able to provide the experiences necessary for the child to meet these needs. In this way he is in a position to most adequately aid in the integration and continuity of experience for these children. At the time specialists are needed they may be brought into the

particular activity the children are facing. To say that the teacher in the self-contained classroom will spend undue time on his own specialty or interest is less a criticism of the program as it is of the supervision or in-service training provided for the teacher of the self-contained classroom.

The teacher in a departmentalized program most often feels two needs: (a) a need to preserve the essential identity of the subject matter, and (b) a need to preserve the subject matter in its logical organization as determined by adults. These two concerns make any attempt at correlation or integration of subjects exceedingly difficult. Even in those cases where integration may be achieved the teachers find that the more completely they have integrated the subject matter the more difficult it is for the child to pull it apart to meet his own needs in this society. The integration of subject matter must be made by the individual himself, in his own way, and no one else can do it for him. Departmentalization, rather than facilitating this for the individual, actually hampers him in his attempts.

OTHER PROPOSALS

Although the discussion up to this point has concerned itself with departmentalization, there are other current proposals which affect integration and continuity of learning in the elementary school. In the limitations of this article only brief consideration can be given to these suggestions. Among them is the proposal for homogeneous grouping in order to provide more adequately for the talented or gifted child. In considering this proposal one should ask—grouping for what purpose? If the purpose is to meet the needs of the gifted, an examination of those needs reveals they are no different from the needs of every child. If the purpose is higher achievement, the research evidence does not indicate substantially higher achievement in segregated as opposed to non-segregated classes. However, if an objective of the elementary school curriculum is to help children learn to understand and show acceptance of each other, there is much to substantiate the need for heterogeneous grouping. If a major goal is to eliminate unhealthy competition, all children should be grouped together. If we segregate children one from the other

and put them in groups more and more alike, we create a tense, unhealthy competition. If they are kept together where there are many differences, a helping atmosphere is created.

Finally the proposal is made that we hurry children through the elementary grades so that they will be prepared to enter high school and colleges at an earlier age than ever before. Suggestions are made that we begin reading in the kindergarten and that the reading readiness period in the first grade be considerably shortened. Other suggestions would have some of the Junior High mathematics brought down to the 5th and 6th grade levels. In considering these proposals it should be recalled that play is the work of a five-year-old and to expect him to sit for prolonged periods at a desk doing paper and pencil work is contrary to the best that we know about this developmental level of children. It is through play and activity that five year olds are best prepared for the first grade. Consideration should be given, also, to the fact that children learn best that which they can relate to their own experiential background and that which comes within the phenomenological range of the individual. The more the subject matter or activities provided are outside of the individual's ability to integrate and assimilate the material, the more we must resort to artificial devices to stimulate learning. The more closely the materials are related to the individual's own life experience the less need there is for concern over the factor of motivation.

As the current proposals for integration and continuity are reviewed it seems that many of these are in the form of mechanical devices such as departmentalization, grouping, and acceleration. In general their proponents seem to avoid the real issue, which is that effective teaching is a matter of a high degree of interpersonal relationships between a teacher and a child and among the children themselves. This can only be achieved if we point out to the lay public the necessity of high professional standards for teachers, of small classes, and of adequate materials. The more vigorously we are able to impress upon the patrons of the school that these are the real issues, the more rapidly we will be able to discard, and the less need we will have to resort to mechanical devices to solve our basic problems in education.

PART IV

Team Teaching, Team Learning, Coordinate and Collaborative Teaching

TEAM TEACHING, and variations of it, may well be the most recent reorganizational innovation on the educational scene. The writings about this concept make up sufficient categories to create a volume dealing exclusively with it. Historic exemplars are difficult to trace in this area. However, some precedents exist.

When Andrew Bell arrived in Madras in the late 1700s to become chaplain to the English garrison, and also superintendent of the newly established school for the orphans of British soldiers, he faced a perennial problem: lack of qualified teachers. He resorted to the expedient of running his school by means of the pupils themselves.

He assigned John Frisken, then eight years old, to be monitor of the ABC class. John's success induced Dr. Bell to extend the experiment. Soon his whole school was operated by monitors. When he returned to London he wrote a report about his superintendency in Madras and published it in pamphlet form. The impact was slight until Joseph Lancaster, spurred on by this report, introduced the monitorial system to London. This monitorial system was a team approach to learning both in its activities

of deployment of teaching strength and in its hierarchy of teaching levels.

The Gary plan, or Platoon plan, of the early 1900s in this country provided for two platoons to which pupils were assigned. This may well have been the ancestor of the differentiated grouping schemes presently being used in the large and small group instruction found in some of the team teaching plans. Batavia, with the two-teacher-per-level plan, may well have been the precursor of the collaborative teaching now found throughout the United States. Other team teaching plans have existed, but, generally, it is recognized that team teaching in its modern guise originates from the Harvard Graduate School of Education. The senior editor of this collection of readings was a critique teacher at the Bowen School, Newton, Massachusetts. This was part of the Harvard-Newton summer program under the careful direction of Dr. Robert H. Anderson, Professor of Education, Harvard Graduate School of Education during which the first stirrings of team teaching took place. In its infancy it also received the sensitive encouragement of Francis Keppel, then Dean of the Harvard Graduate School of Education, presently Commissioner of Education of the United States.

The term *team teaching*, however, still lacks a precise definition. The research designs of the many experiments set up to measure the effectiveness of this type of organization do not allow for quantification of data which would stand up under the scrutiny of scientific analysis. Some very interesting descriptive materials about plans in operation do exist and expound the excellent insights of those persons working in team teaching.

(Basically, team teaching involves the association of two or more teachers who have joint responsibility for the education of a fairly large group of students. The number of students in the total group usually corresponds to the one-to-thirty ratio of the self-contained classroom organization; that is, two-member teams have approximately sixty students, three-member teams about ninety students, up to maxima of the four- or five-member teams.

Team teaching is not a method intended for the reduction of the number of teachers in any given school. It is rather a re-deployment of and a different utilization of teachers.

(Team or pupil-team learning plans are recent developments

that utilize the natural desire of children to work fruitfully together.) Pairs or larger groups of pupils work in a classroom wherein the teacher is pivotal in task setting, analyzing, reacting, and evaluating. Team learning is kept in balance with whole-class activities by the teacher, and requires, unlike team teaching, no reorganization of the school. It is adaptable to team teaching, self-contained classrooms, or ability grouping plans. It involves paired pupils who operate as a team in attacking an area of the curriculum.

From the very simple type of teaching by teams in an organization called *coordinate teaching* (wherein two teachers are assigned to a large class and are equally responsible for instruction of the class) to the organization that employs a hierarchy of teachers (wherein the team leader is responsible for the administration and coordination of the team) there exist many kinds of different patterns. (Many schools use team teaching at a single grade level, many cut across grade lines, and many move directly into a nongraded program.)

The full value of team teaching remains to be measured. For this reason any list of advantages and disadvantages are perceptions, for the most part, and somewhat hypothetical, rather than proven statements of fact. As Anderson rightfully cautions, "All the evidence necessary to a final judgment may require years of further research. Our obligation in the meanwhile is to maintain an open mind."

The advantages claimed are that:

- Superior teachers can exercise greater influence in the school and still remain in classroom teaching.
- Team teaching facilitates grouping because the basic group is so large that small groups can easily be formed for almost any purpose and there are enough really bright students to make advanced projects feasible.
- During large group teaching periods other teachers are freed for small group work, lesson planning, and parent-teacher conferences.
- Pupils spend more of their school time receiving instruction than when they are in self-contained classrooms.
- More extensive use is made of visual aids than would be in

self-contained classrooms, wherein the teachers lack the time and sometimes the knowledge to use these resources.

- There is more efficient use of space, materials, and equipment.

- Teachers find it helpful to exchange information and viewpoints on various problems.

- Evaluation is the combined judgment of several teachers and thereby improves the process of pupil appraisal.

- It furnishes an impetus to improve curricula.

- It may be very effective for training student teachers.

- The beginning teacher is not isolated; he has supervision and help from experienced teachers.

- Part-time teachers with special competencies can be employed even though they are not able to instruct full days.

- (During a member's illness, the others can fill the void with less loss of instructional time) than when a substitute comes into a regular classroom and often does nothing more than "baby sit."

- The teacher works harder on improving the instructional ability of a team.

The disadvantages claimed are that:

- The frequency and intensity of contact of the team members leads to complex problems of human relations.

- The problem of status pyramiding of teachers under a team chairman works against a healthy climate.

- Inherent in the flexibility of team teaching is the fact that much time and effort must be spent on the complexities of scheduling and planning all the group and individual activities.

- Mechanical aspects of evaluation may be more difficult.

- Questions children have during large group lectures or demonstrations must wait until later.

- Opportunities for pupil leadership may be lost because of the complexities of the program and the size of the group.

- Noise may be a problem in a large group or when several small groups are working in one room.

- Instruction tends to become more lecture-type and formal.

- Interaction between the superior teachers and the learners (especially in the hierarchal plan) may be minimal and the con-

tacts that learners have with teachers may be limited to the teachers of lesser competence.

- It is very difficult to find teachers with the special competencies and high qualifications necessary for team leaders and senior teachers.

- It will probably cost more since the team leader and the senior teacher will be paid more, secretarial help is usually provided, and new buildings with adjustable space are needed.

The structure of team teaching is still so amorphous that any evaluation of its effectiveness and the attendant advantages or disadvantages are generally perceptions, born in the heat of change, and rarely applicable to the totality of the educational movement of which they are a part. Hence, descriptive or narrative documentation makes up the body of literature that surrounds this new educational plan. Little empirical evidence on team teaching exists. Anderson, Hagstrom, and Robinson describe clearly a framework and setting and hypothesize some interesting and plausible possibilities. The material from the Harvard-Lexington Summer Program (1964) indicates the present scheme under which training for the "team teaching world" takes place at that institution. *Pupils, Patterns, and Possibilities* reports a school system in "team teaching action." The summary from *The Instructor* and Dean's review do a fine job of hitting the critical questions and collating the present thoughts of people involved. Drummond attempts an assessment, while he cautions his reader that by necessity any assessment is one from a "value base" rather than a research base this early in the game. Douglass describes the west-coast version as practiced by Claremont in its project with cooperating school systems. He lists some "presumed" advantages, reviews some of the evaluated perceptions garnered to date, reports on some collected test data, and most importantly gives some guidelines for those who might like to try it. Finally, Durrell describes the work of a concept called *pupil-team learning*, a program involving pairs of children working together, which was started in Dedham, Massachusetts several years ago. Durrell's program, much like the Harvard-Lexington idea, operates a training program at Boston University for those interested in this type of educational innovation.

Team Teaching in an Elementary School

*Robert Anderson, Ellis A. Hagstrom, and
Wade M. Robinson*

In 1957-58 the personnel of Franklin School in Lexington, Massachusetts, were re-organized into four teams. Two of the teams were large, composed of five or six teachers. Two were small, composed of three teachers. The titles *team leader* and *senior teacher* were used to designate teachers who had responsibility for leadership in the teams. Classwork in each team was planned jointly by all team members, and through various re-deployment procedures the children were taught in groups that ranged in size from six to more than a hundred. Members of the staff of Harvard University shared with the administrators and the teachers in Lexington in the formulation of program plans and in the analysis of the effectiveness of the program.

The Franklin School Project is a major activity within the School and University Program for Research and Development, hereafter identified by its initials *SUPRAD*. This program involves the school systems of Lexington, Concord, and Newton, Massachusetts, and Harvard University, and is supported in large measure by a ten-year grant from the Ford Foundation. The Administrative Board of *SUPRAD* approved the broad outlines of the teaching teams proposal in May, 1957, and the planning and recruitment proceeded with considerable speed. The planning provided for the following teams of teachers during 1957-58:

- Alpha: three first-grade teachers (senior teacher in charge)
- Beta: six second- and third-grade teachers (team leader in charge assisted by two senior teachers)
- Gamma: three fourth-grade teachers (senior teacher in charge)
- Delta: five fifth- and sixth-grade teachers (team leader in charge assisted by a senior teacher)

Each team was assigned a part-time clerical aide, and the two larger teams were each assigned a quarter-time teaching

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assistant. Preparations were completed for the principal and seven teachers to engage in preliminary planning in a six-week summer program under the supervision of Harvard instructors. The program was launched less than two months from the time it was first described on paper.

Among the reasons for establishment of the School and University Program for Research and Development was the belief that public school systems might more easily close the gap between educational ideals and educational realities if they joined with private universities in programs of research and demonstration. Relations analogous to those between medical schools and hospitals were seen as a way toward tough-minded research and unbiased evaluation of new ideas. Among these ideas was the contention that the existing organizational pattern of American schools and classrooms may be inadequate and unsuitable in view of the vast population increase and the severe shortage of professional workers as needs are now defined.

Related to this contention was the belief that too few first-rate people are attracted to teaching, possibly because of the low economic incentives, the low social position of the classroom teacher, and the general inadequacy of supervisory practices and lack of opportunities for professional growth in the typical school. The question was asked: "Would not more first-rate people be attracted to teaching if the economic and social factors were made more attractive and if there were more ready opportunity for professional growth?" Believing the affirmative to be true, *SUPRAD* set out in the Franklin School to test the feasibility and the effect of a team-teaching organization plan.

Implicit in all efforts to create more attractive conditions (economic, social, and professional) for teachers was the belief that these would lead to better instruction for children, through more effective performance of the teachers. It was hoped that the team organization would permit more flexible and appropriate grouping arrangements to meet individual interests. It was believed that children would be stimulated by association with larger numbers of children and with more than one teacher. It was expected that teachers would find more efficient and interesting ways of presenting lessons through having larger blocks of

planning time and through doing more group planning. It was thought that the pooling of teachers' ideas and observations would lead not only to stronger teaching but to better pupil adjustment and more adequate pupil guidance. These and other benefits were seen as attainable if various administrative problems posed by radical changes in personnel organization could be solved.

The first year of the project was seen as an exploratory year, during which the participants hoped to discover whether a hierarchical pattern of team organization was feasible. The traditional pattern of self-contained classrooms, coupled with a system of uniform and undifferentiated salary and prestige for all teachers, was set aside, and a system was initiated wherein prestige roles and responsibilities were assigned to certain teachers and salaries were adjusted accordingly. The teachers in each team were asked to regard all the children in their team as the mutual responsibility of all. They were asked to plan the educational program jointly under the leadership of team leaders and senior teachers. They were invited to experiment with many kinds of class grouping and instructional techniques, using the physical facilities and the instructional resources of the building in whatever ways seemed appropriate and without regard to conventional definitions of the best class size.

One major objective of *SUPRAD*, and the Franklin School Project in particular, is to discover and to demonstrate new and more promising ways of utilizing teacher competencies. The roles of team leader and senior teacher were set up in an effort to accomplish two purposes: first, to provide rewarding and prestigious roles to which persons of outstanding competence can aspire, roles which (unlike most supervisory and administrative roles in education) allow teachers to remain in direct association with pupils; and second, to create a collaborative relationship between teachers that offers promise of accelerating and enlarging the development of professional skills and insights. Implied in the latter purpose is that teachers in continuous and intimate association will more readily share their knowledge and express their needs, with the result that each has greater opportunity to learn

from and contribute to the others. Hopefully, those persons with the greatest talents and a career dedication to teaching would work toward the prestige roles and through these roles constitute a significant source of strength for teachers of less experience, competence or dedication.

Another objective of the project is to find more effective means of using the services of non-professional persons in the community and professionally trained persons who are unable or unwilling to devote full time to service in the schools. In the belief that classroom teachers now devote too much time to clerical and minor administrative duties, it was arranged that each team would have about half-time clerical assistance. Partly to compensate the team members for the extra demands that research activities would make on their time and partly in the hope of demonstrating that good use can be made of the part-time professional worker under team conditions, the two large teams were each assigned a quarter-time assistant teacher.

One hypothesis to be tested in the project is that certain kinds of instructional experiences can be at least as beneficial to children when they are taught in large groups (that is, groups that combine two or more standard size classes) as when they are taught under conventional conditions. It was believed that one prerequisite to testing this hypothesis was the development of instructional techniques appropriate to large groups. (It was also believed that various content and skill areas probably lend themselves better than others to presentation in large groups.) The teachers were therefore asked to develop such techniques and to identify such content, through various exploratory lessons.

The deployment of children in conventional elementary-school situations is usually a static arrangement, each classroom group remaining intact and usually in the same homeroom throughout the day. In departmentalized situations, which are quite unusual below seventh grade, children may move from place to place but the class grouping is usually an unchanging one. Under team-teaching conditions, a number of more dynamic patterns of deployment and redeployment become possible. For example, children can be left in homeroom groups, homeroom groups (or portions thereof) can be combined in large groups, or children can be exchanged between homeroom groups. It is

obvious that teachers, too, can exchange locations and instructional assignments. It remained to be tested, in the Franklin School Project, whether these kinds of redeployment under team-teaching conditions would be both manageable and desirable.

That education is an extremely conservative profession is well attested by the slow rate of its progress and by the meager financial and other support for the research on which intelligent change depends. Teachers themselves hold rather doggedly to traditional beliefs and practices, some of which may no longer stand the test of objective examination. The research worker has an almost inexhaustible mine to probe in education, yet his work is frequently blocked or slowed by the diehard forces of tradition and conservatism.

The Franklin School Project is especially notable because of the many beliefs and practices it has chosen to challenge. Among these are such widely held views as the following: individual professional autonomy, as exemplified in the self-contained classroom, is conducive to professional growth and satisfaction; the assignment of differential rewards, status, and responsibility to teachers will lead to poor morale and low productivity; an intimate and continuing one-to-one teacher-pupil relationship is more conducive to pupil security than the more varied relationships necessitated by a three- or five-to-one teacher-pupil relationship; there are advantages in having a single teacher manage all the subject-matter instruction for a given class; the ideal size of classroom groups for all kinds of instructional purposes is somewhere between twenty and thirty; and the lecture technique of teaching and its variants are essentially unsuitable as instructional approaches to young children.

Team organization may be understood best, perhaps, against the background of the more common organizational pattern of self-contained classrooms. In the typical self-contained organization, some twenty to thirty pupils are assigned to each teacher, and each group is placed in a classroom where most of the instruction takes place at the hands of that one teacher. She is expected to have the skills and the knowledge for competent instruction in virtually all the subject-matter areas. She must provide as best she can for the range of individual needs and

abilities in her group.) In addition, she must ordinarily perform a variety of clerical duties and supervisory tasks of a non-instructional nature. Under typical conditions, she has little contact with other teachers in the building, and she receives little supervision.

In contrast, under the team-teaching pattern, groups of teachers take joint responsibility for the instruction of a segment of the school population.) Typically, from three to seven or eight certificated teachers take responsibility for the instruction of from seventy-five to 240 pupils of similar age and grade. The clerical and secretarial needs of these teachers are cared for by a clerical aide. The size of the team may be limited by the number of adults with whom a leader can relate effectively and by the number of pupils about whom the leader may reasonably be expected to have fairly specific information.

The teaching team is a formally organized hierarchy whose basic unit is the teacher. Generally, the teacher's experience or training or both have been of a general nature, or he does not wish to assume the responsibilities of a higher position. The position of teacher in the teaching team carries with it the status and prestige commonly accorded the position of teacher in the self-contained pattern today.

Above the position of teacher is that of senior teacher. Depending on the size of the team and the age of the pupils, the team may have one or more senior teachers. A small team may have none. The senior teacher is an experienced teacher who has special competence in a particular subject-matter area or in a particular skill or method. The senior teacher assumes responsibility for instructional leadership—both in his team and, if needed, across teams within the building—in the area of his special competence. Although the positions of senior teacher and team leader are regarded as terminal for many, a possible career line from this position might lead toward the position of team leader or toward such positions as system-wide staff specialist or supervisor or methods instructor at a teacher-training institution.

At the apex of the team hierarchy is the position of team leader. The team leader, as specialist in a content area that complements the areas of his senior teacher assistants, also exercises certain general administrative and co-ordinating functions.

The team leader also has primary responsibility in his team for the identification of pupil needs and readiness and for the assignment of pupils to groups; for directing the continual re-examination and development of the curriculum; and for the training and supervision of junior and less experienced personnel on his team. To discharge his responsibilities effectively, the team leader is released from classroom teaching responsibilities for about a third of the school day. The career line from this position would probably lead to a principalship and perhaps to the superintendency.

In consideration of their additional training and increased responsibilities, senior teachers receive a salary increment beyond the teachers' schedule, and team leaders receive an increment beyond senior teachers'.

The role of the principal under the teaching teams organization will probably become one of enhanced prestige and responsibility, somewhat akin to the present role of director of instruction. Since team leaders and their subordinates are able to attend to many routine administrative and management details, the principal has more time and opportunity for leadership in curriculum development, instructional supervision, and guidance. Although the principal continues to have direct supervisory relations with regular classroom teachers, it is likely that he serves quite often as advisor to the team leaders as they carry out their leadership functions and curriculum-building.

A chief advantage of the school organization sketched here lies in the strength of leadership resources that reside in the school whose staff satisfies the specifications for each role. As shown in Figure 1, the principal and the team leaders, for example, may be viewed as an administrative cabinet. These staff members, augmented by the senior teachers, constitute an instructional cabinet. In effect they would together possess the range and depth of competencies of the curriculum-and-methods instructors in a teacher-training institution and hence would be well qualified to appraise and upgrade the school's program.

Thus, a school might expect to operate on the basis of a fairly stable nucleus of upper-echelon career people and a fairly high turnover among teachers with little loss to its total instructional program.

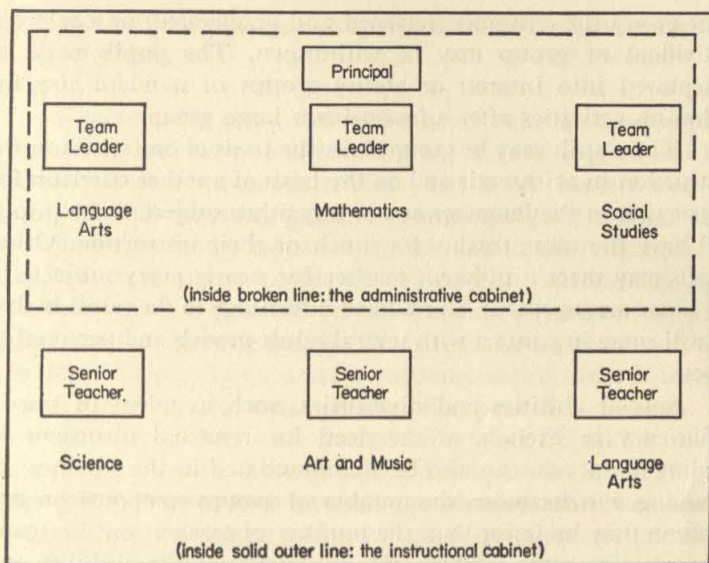


Fig. 1. Pattern of organization for team teaching.

Despite the encouragement of specialization, the project does not advocate departmentalization as it is commonly understood in educational circles. All teachers continue to teach all, or nearly all, subjects. Furthermore, teams may draw on part-time teachers, consultants, and resource personnel from the community or nearby institutions of higher education.)

The team treats its entire pupil complement as a unit. But both group size and the bases of group composition may vary from class period to class period. The goal is flexible grouping based on specific instructional needs. Thus the team may deal with its pupil complement as a total group, or it may regroup and subdivide the pupils in much the same way that the teacher of the self-contained classroom groups and regroups the pupils who are her responsibility. The entire group of from 75 to 250 pupils may meet as a single large group to hear a lecture or story, to see a demonstration, or to view a movie. Or from the

large group the extremes (retarded and accelerated) or a selected individual or group may be withdrawn. The pupils may be redeployed into interest or ability groups of standard size for follow-up activities after a lesson for a large group.

The pupils may be grouped on the basis of one criterion for instruction in arithmetic and on the basis of another criterion for instruction in the language arts or any other subject. Some pupils will have the same teacher for much of their instruction. Other pupils may meet a different teacher for nearly every subject. In the latter arrangement, a presumed advantage to the pupil is that he will come in contact with several adult models and personality types.

Special abilities and disabilities, such as talent in music, proficiency in French, or the need for remedial treatment in reading or speech, can also be accommodated in the schemes for grouping. Furthermore, the number of groups composed on any occasion may be fewer than the number of teachers on the team, thus releasing some teachers from instructional responsibility and enabling them to engage in other professional activities.

Some phases of learning—listening, reading, watching—can be engaged in as well by a large group of pupils as by a small group. Just what the maximum size of these groups may be under different conditions has not yet been determined. However, groups of 75 pupils have met routinely in the Franklin School, and groups of 140 or 215 are not uncommon.

Redeployment of pupils has taken place for instruction in reading and arithmetic at all levels—from first through sixth grade. Pupils in all grades have likewise had instruction in large groups. Data from 1958–59 indicate that about a third of all the instructional sessions involved groups of forty or more pupils and that there was considerable pupil movement and transfer in all grades.

Though groups of twenty to thirty are smaller than they need be for efficient and effective pupil participation in many kinds of learning activities, these same groups are too large for more nearly individual activities. Reciting, discussing, those activities that seem to require a high rate of interaction between pupils or between pupils and teacher can perhaps best take place in small groups ranging in size from ten or twelve down to a few. The flexibility of pupil grouping and redeployment facili-

tated by the team organization seems to offer a realistic solution to this problem.

Theoretically, then, the team provides the structure within which team leadership personnel engage in some supervisory and curriculum development activities. The team leaders take responsibility for assigning pupils to groups within the team. They co-ordinate the instructional efforts of junior personnel and also may have more time available for talking with parents. The team structure makes it possible for all teaching personnel to spend more time on planning and on the preparation of materials and less time on clerical and non-instructional supervisory duties. By taking advantage of the opportunities provided through the presence of specialists and clerical aides, and by taking advantage of the released time provided through the scheduling of large group lessons and through the creation of fewer groups than teachers, much more effective use of professional personnel can be realized under team organization than under the self-contained pattern. Furthermore, by holding team meetings before and after school, there is opportunity for discussion of instructional problems. In many respects, the team structure provides an extension of the training period with its emphasis on planning, observation, and evaluation.

The project does not claim that all the components of its program or model are unique. Many elements have been used in best educational practice for some time. The project is also aware of the existence of several versions and variants of teaching teams organization that are now being developed throughout the country. What is unique about the Teaching Teams Project at Franklin School is the number and the particular combination of elements in its model.

At the beginning of the 1958-59 school year, several changes were made in the organization of the teams, resulting in the following arrangement:

- Alpha: four first-grade teachers (team leader in charge)
- Beta: six second- and third-grade teachers (team leader in charge assisted by a senior teacher)
- Omega: eight fourth-, fifth-, and sixth-grade teachers (team leader in charge assisted by two senior teachers)

Again clerical assistance was provided, and part-time teacher service was made available to each team for research purposes.

The organizational pattern of Franklin School for 1959-60 is essentially the same as that for the preceding year. The organization may be presented most vividly, perhaps, by a diagram (see Figure 2).

There are at least two major differences between the organization for 1958-59 and for 1959-60. One is a difference in structure. For 1959-60, a new senior teacher position was created outside any team organization. This position of senior teacher specialist in art, music, and physical education gives the teaching teams more freedom in program planning and in use of space than they enjoyed under a former arrangement of special visiting teachers who, of necessity, worked on a fixed schedule involving system-wide considerations.

The other change is one of emphasis. Whereas before 1959-60, senior teachers were looked on essentially as grade-level chairmen or as assistant or substitute team leaders, in 1959-60 team leaders and senior teachers alike are becoming specialists in a particular instructional area. The team leader, in addition, assumes administrative responsibility for his team.

In the structure outlined in Figure 2, precise specification of qualifications and functions are still to be written. However, the hierarchy is seen as including a team leader, a senior teacher, a teacher, a part-time teacher, an intern, and a clerical aide.

The team leader (T.L.) is an experienced, mature master teacher of unusual talent who has had considerable experience, who has training well beyond the master's degree and who has had extensive training in curriculum and instruction, in supervision, human relations, and/or educational sociology. This person would have demonstrated an ability to work with teachers in a leadership role. About a third of his school day might be released for observation and training of subordinates, planning, curriculum development, research and evaluation, and parent conferences.

The senior teacher (S.T.) is an experienced, mature person with above-average talent and considerable advanced training, comparable to the well-regarded career teacher today, and with some specialized competence in a particular curriculum area.

The teacher (T.) category is seen as composed of two types

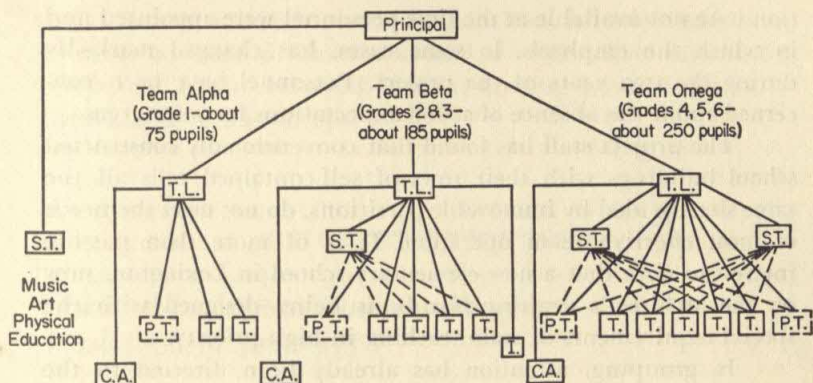


Fig. 2. Organization for team teaching in Franklin School for 1959-60.

of personnel: first, competent, experienced teachers of broad general training, and second, those of relatively little experience. The status of this position is seen as equal to that enjoyed by the typical teacher today.

The part-time teacher (P.T.) is a fully trained teacher, usually experienced, who is unable to teach full time. A combination of two or three part-time teachers might fill a billet which would otherwise require one full-time teacher.

The intern (I.) is a trainee in a program of teacher education doing full-time supervised teaching in a school for one semester. The work of the intern is customarily directed by a senior teacher or team leader working with the training school supervisor.

The clerical aide (C.A.) requires no professional preparation. This person will help with the routine, non-technical aspects of team operation: typing, xeroxing, filing. It is possible that other subprofessional roles can be developed in this category, for example, technicians capable of producing instructional and demonstration materials.

The absence of precise specifications for the qualifications and functions of the several positions has resulted in some frustration and tension as individuals at all levels have tried to work together in ill-defined roles for which adequate criteria for selec-

tion were not available at the time personnel were appointed and in which the emphasis, in some cases, has changed markedly during the two years of the project. Personnel have been concerned about the absence of stated expectations for some areas.

The project staff has found that conventionally constructed school buildings with their rows of self-contained cells all the same size, divided by immovable partitions, do not meet the needs of most effective team operation. It is of more than passing interest to note that a new elementary school in Lexington, now on the architect's drafting boards, is being designed with the special requirements of team teaching in high priority.

In grouping, attention has already been directed to the possibilities and flexibility of the situation. But the flexibility and the freedom present problems that can be frustrating. They raise questions about criteria for grouping, about the availability and validity of instruments to evaluate pupils in terms of the criteria, about the transfer of youngsters from one group to another, about the merits of horizontal enrichment and longitudinal progression, and about the justification for large group instruction. These are examples of a host of questions that could be raised about pupil redeployment. It is toward the clarification and understanding of questions such as these that some of the efforts of both the school and university staff are now directed.¹

In curriculum development, also, the opportunities the team structure offers for reflective and creative work and the challenges provided by the flexibility of the grouping arrangements have dictated a re-examination of the curriculum. Questions are immediately raised as to the objectives of the school, of a particular subject, or of a unit. Issues are raised on the criteria by which content is to be selected and how it is to be organized. Questions of the appropriateness of content, materials, and technique—with perhaps special interest in the use of technological devices—for groups of different composition and different sizes also demand attention. To these and similar questions, the attention of the project is also directed. Efforts are being made to define and clarify the problems involved and to develop and test various sequences of the curriculum.

¹ Further, more definitive analyses of problems and implications are being written and will appear in the literature in the near future.

The opportunity to come to grips with some of these issues in an atmosphere of collaboration and constructive criticism is one source of the attraction and the holding power inherent in the teaching-teams concept.

Harvard-Lexington Summer Program 1964 (Fourth Summer)

The demand for higher quality in education cannot be met unless teachers and administrators in positions of leadership become professionals in fact as well as in aspiration. As a contribution to this end, the Harvard Graduate School of Education, in collaboration with twenty-nine school systems throughout the United States,¹ will offer a summer program in Lexington, Massachusetts beginning June 23 and running through August 7, 1964.

The Harvard-Lexington Summer Program, entering its fourth year of operation, will offer experienced school personnel, through a team organization, a chance for supervised inquiry and experience in the fields of instruction and supervision. The Program therefore should be useful to teachers, supervisors, assistant principals and principals. The Program may also interest students in schools of education, preferably experienced in school practice, who see the operation of a school under supervision as an opportunity to synthesize theory and sound practice.

The Program is organized to increase professional maturity and leadership by engaging its students in inquiries into the following subjects:

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(Fourth Summer) (Spring 1964) by permission.

¹ Arlington, Belmont, Brookline, Concord, Lexington, Natick, Needham, Newton, Waltham, Wayland, Wellesley, Weston, Winchester, Mass.; Palo Alto, Calif.; Jefferson County, Colo.; Greenwich and Westport, Conn.; Sarasota County and South Florida Education Center, Fla.; Chicago, Ill.; Montgomery County, Md.; Milford, N.H.; Glen Cove, Mount Kisco, and Norwich, N.Y.; Mount Lebanon and Pittsburgh, Pa.; Middlebury, Vt.; and Racine, Wis.

- The structure of curriculum in English, mathematics, science, and social studies;

- The potential for better learning, greater self-direction, and greater self-evaluation, with more concern for mastery, which may be possible in learning through problem-solving;

- The possibilities of improving instruction through analysis of teaching;

- The possibilities and limitations of different models of team teaching and the problems of decision-making by a group; and

- The problems involved in leadership.

The Summer Program offers opportunity for these several inquiries in a school, and requires participation under direction and criticism with the expectation that a student will acquire a full understanding of his role as a professional leader.

TERMINOLOGY

TEAM: A unit of approximately 100 pupils at two grade levels, 24 students, a teaching team leader and assistant, an observation team leader and assistant, and four subject specialists

SUB-TEAM: A sub-group of eight students who remain together during the first three weeks of the summer school and are jointly responsible for a sequence of (1) observing instruction under the direction of an observation team leader and his assistant, (2) planning for instruction under the direction of subject specialists, and (3) teaching all the pupils of the team under the direction of a teaching team leader and his assistant.

THE NATURE OF THE STUDENT INQUIRIES

CURRICULUM STRUCTURE

The search of structure in curriculum is based on Bruner's thesis² that:

- Every subject has structure—*i.e.*, a certain number of basic

² Bruner, J. S. *The Process of Education*, Cambridge: Harvard University Press, 1960.

ideas or concepts which are consistent with a larger number of subsidiary principles;

- Selected aspects of this basic structure can be taught at any grade level provided that materials and experiences for pupils are consistent with the maturity of the pupils.

Appropriate aspects of a structure of a subject are chosen for consideration by pupils in the several teams of the Summer School. Student inquiry into curriculum structure is encouraged to provide a partial basis for improving the curriculum of schools when the student returns to his school system.

THE PROCESS GOALS³

In considering the process goals, the student will discover that they have two dimensions:

- They may be considered as the *processes* (problem-solving thinking, self-direction, self-evaluation with concern for mastery) by which pupils acquire knowledge and skills in the various subjects.

- Once the *processes* have been mastered, the learner has acquired the *tools* with which to direct his own education with an inquiring attitude of mind toward learning.

ANALYSIS AND EVALUATION OF INSTRUCTION

The students' problem in the evaluation of instruction is also two-fold:

- To acquire skill in analysing the relation of teaching strategy to the purpose of the lesson; and

- To learn how to communicate an analysis so as to improve the instruction of a fellow teacher.

The Program provides opportunity for growth in this realm by requiring a student to alternate in the roles of evaluator and teacher.

TEACHING WITHIN THE CONTEXT OF TEAM TEACHING

The students will have the opportunity to experience and examine the advantages and limitations of different forms of team teaching. During the six weeks in which pupils attend, the

³ "Notes on the Strategy of Educational Reform," Dr. Glen Heathers, New York University.

program starts with some modification of the "self-contained" classroom and proceeds, during successive weeks, through shared and cooperative teaching to full-scale team teaching. The goal of inquiry regarding team teaching is to provide a basis that would enable the student to improve the organization of his own school.

PROBLEMS INVOLVED IN ASSUMING LEADERSHIP

The program in this area is to study the problems involved when teachers work together to reach agreements in team planning and operation. Each student participates as a member of the staff fully responsible for the conduct of a school and accepts the responsibility for leadership in his team, which he will be offered from time to time.

PROGRAM ORGANIZATION AND OPERATION

The 1964 Harvard-Lexington Summer Program will be housed in the Estabrook Elementary School in Lexington, Massachusetts.

The Program will enroll approximately 300 pupils (grades 2-7) and some 72 experienced teachers, supervisors, and administrators. Pupils will be organized into three teams of about 100 each, with representation of two contiguous grade levels in each team (Team A, grades 2-3; Team B, grades 4-5; Team C, grades 6-7). Twenty-four students (teachers and administrators) affiliated with each of the 100-pupil teams will be divided into three sub-teams of eight students each.

During the first three weeks of the summer school, each of the student sub-teams will rotate on a weekly basis in planning for teaching, in teaching, and in observation and analysis of teaching by their peers. Experienced team leaders, specialists in the observation and analysis of teaching, and subject specialists, all of whom are members of the faculty, will provide direction and supervision. The students will receive course credit (four units) for the practicum participation just mentioned, and also will enroll in a seminar in the Teaching and Learning Process (four units) which is designed to complement the practicum experience.

At the end of the first three weeks of summer school, the administrators affiliated with the A, B, and C teams will withdraw

from full-time participation with the nine sub-teams. Under the direction of Dr. Robert Anderson, they will devote themselves to the special functions of the administrator in a team teaching school.

During the fourth, fifth, and sixth weeks of the school session, the teachers will continue to focus on their functions in a typical team teaching school. Under the direction of their team leaders and with the resource help of other members of the professional staff, each team can determine its own pattern of operation and schedule its members for planning, teaching, observation and analysis of teaching. This kind of fluidity built into the training program brings the team's operation closer to the realities of a typical team teaching school, where the team members must make decisions relative to the above facets of our training cycle.

OUTLINE OF COURSES

LC-140: PRACTICUM (4 UNITS). (REQUIRED OF ALL STUDENTS.)
SENIOR STAFF MEMBERS

The Practicum involves students in operating a school for six weeks while engaging in their problems of inquiry involving planning for instruction, teaching, observation and analysis of teaching, quality decision-making in a team situation, and

DIAGRAM 1

Sample Team Organization (1st, 2nd, 3rd weeks)

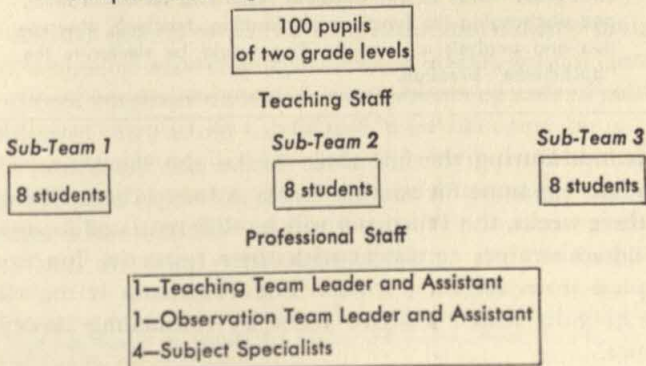


DIAGRAM 2

Operation of Sub-Teams in Cycle of
Planning—Teaching—Evaluation

(1st Week)		
<i>Sub-Team 1</i> (8 students) under direction of Teaching Team Leader	<i>Sub Team 2</i> (8 students) under direction of Observation Team Leader	<i>Sub-Team 3</i> (8 students) under direction of Teaching Team Leader, Subject Specialists
With 8 students, each member in Sub-Team would teach half the morning session and use the remaining time for evaluation sessions with Sub-Team 2, or in re-planning for next day's teaching.	Observe teaching —1 per. Analysis of teaching observed —1 per. Critique with teacher observed —1 per. Observation follow-up next day —1 per. Critique follow-up next day —1 per.	Part of the A.M. session with Sub-Team 1, observing teaching and evaluating pupils Part of the A.M. session with Subject Specialist, planning for 2nd week of teaching

(2nd Week)

Sub-Team 1 assumes role of
Sub-Team 2

Sub-Team 2 assumes role of
Sub-Team 3

Sub-Team 3 assumes role of
Sub-Team 1

(3rd Week)

Sub Team 1 assumes role of
Sub-Team 3

Sub-Team 2 assumes role of
Sub-Team 1

Sub-Team 3 assumes role of
Sub-Team 2

(4th, 5th, 6th Weeks)

Each team makes its own decisions regarding format of team, and discharging the functions of planning, teaching, observation and analysis of teaching. This would be similar to the "back-home" situation.

leadership. During the first three weeks, the Practicum will be essentially the same for administrators as for teachers. During the last three weeks, the Practicum will be differentiated for teachers and administrators consistent with their respective functions in a typical team teaching school. The Practicum is the clinical laboratory in which students learn by reconciling theory and practice.

LC-153: SEMINAR IN THE TEACHING AND LEARNING PROCESS (4 UNITS). (REQUIRED OF ALL STUDENTS.) ROBERT H. ANDERSON AND ASSOCIATES

This course complements Lc-140 and provides the theory and rationale of the program. The general areas to be covered in the course include the teaming of teachers, the process goals of education, motivation for learning, analysis of instruction, decision-making by a group, and leadership. All of these topics will be considered as they relate to the improvement of teaching and learning within the structure of team teaching.

RELATION OF COURSE WORK TO PRACTICUM

The purpose of the Lc-153 Seminar is to aid the student in conceptualizing the Harvard-Lexington Program and to give him direction as he pursues inquiries leading to professional leadership. Therefore, the sequence of Seminar topics will coincide, insofar as possible, with the requirements of the Practicum Lc-140.

Pupils, Patterns, and Possibilities

FOREWORD

Annual reports of school superintendents usually present a broad résumé of recent progress in the school district, perhaps with special emphasis on a few developments of note. Pittsburgh has followed this custom in the past, and will continue to do so in the future, but this year is an unusually appropriate time to single out for a report in depth just one of the many significant activities in our schools.

Pupils, Patterns, and Possibilities is the story so far of team

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teaching in Pittsburgh. Nowhere else in the country are so many pupils and teachers involved in team teaching, or is as much money being spent on it, as in Pittsburgh. Nowhere else have I seen such enthusiasm and high hopes for success.

Team teaching is a genuinely new idea—an exceptionally powerful idea—with a simple central thesis and the possibility of many imaginative variations. Some of Pittsburgh's adaptations are peculiarly appropriate for large metropolitan school districts, but the essence of team teaching, which is a flexible intimacy between student and teacher, can be used by schools anywhere.

We make no claims yet—not even modest ones—because we are still feeling our way. But we like what we have found, and we think that we are working on a design which may alter the shape of American education, once it is properly supported by television, by teaching machines, and by an appropriate physical environment.

The people who are working in our project are not dreamers. They are hard-headed teachers and citizens who are looking for tangible results. Their work to date and glimmerings of their irrepressible aspirations are reported to you on the following pages.

Sincerely yours,
Calvin E. Gross
Superintendent of Schools

Inherited, ready-to-wear patterns of organization do not fit the variety of demands made on a big city school system. If we are to obtain a full return on our educational investment, a flexible and efficient design for instruction is required. To put the matter plainly, we cannot afford to squander the talents of teachers or ignore the resources of the community. By sweeping aside stereotypes which impose rigidity and isolation on the classroom, the path is cleared for teachers to concentrate on the real job at hand—increasing the opportunity for children to learn. No plan for instruction carries with it built-in assurances of improvement, but the removal of unnecessary restraints from good teaching can release a freshening stream of enthusiasm and discovery.

PIONEERS IN THE USE OF TEACHING TEAMS

The outlines of team teaching began to appear at Englewood, Florida, and Carson City, Michigan, in 1956. One year later the first full-scale program was developed at Franklin School in Lexington, Massachusetts. It was sponsored by SUPRAD (School and University Program for Research and Development) through a working relationship among the schools of Lexington, Newton, and Concord, and the Graduate School of Education of Harvard University. The Harvard-Lexington Program has developed many of the distinguishing features of the team approach, which is now being used with variations in about 50 communities throughout the country. Norwalk, Connecticut, began its team program in 1958. Another 300 school districts are expecting to introduce team teaching soon.

PITTSBURGH'S PROJECT

Rarely does a school system find both the opportunity to take a fresh look at its program and the means of bringing about direct and substantial change. But in June 1960 an initial grant of \$128,400 from the Ford Foundation and an allocation of \$87,000 from school district funds made a new view and a bold thrust possible in the Pittsburgh Public Schools. The program was initiated in a cluster of five elementary schools—Letsche, Miller, McKelvy, Vann, Weil—located in the Lower Hill, a congested area close to the downtown business section of the city. It seemed logical to begin the program in these schools because they constitute a family both geographically and by virtue of a long history of cooperation among the principals in solving common problems and planning improvements. Many of their problems stem from the excessive mobility of the population they serve, resulting in frequent transfer of pupils from one school to another within the area, a high rate of teacher turnover, and the depressing cultural and socio-economic conditions in some of the areas from which their pupils come.

Pittsburgh's program in team teaching is designed to heighten the educational aspirations of children—to find and

develop latent talent, to broaden opportunities for children who can make normal progress, and to give extra help to those who need it. The basic aim of the program is to teach every child, regardless of his background, the intellectual competencies needed in today's world.

The general spirit of the Team Teaching Project is expressed in a no-holds-barred determination to make effective use of everything and everyone in the school and community to add strength to the learning program. By drawing community resources into a working relationship with the schools, educational experiences have been extended and brought to life. Children, often for the first time, attend concerts and plays. They take trips to historical places and observe exciting business operations. They hear knowledgeable citizens discuss some special topic in the

**Examples of Types of Materials and Activities that are Appropriate
Either to Large Groups or to Small Groups**

	Large	Small
Reading	Extension of vocabulary	Phonics
	Dramatization	Oral reading
	Choral speaking	Building of vocabulary (Vocabulary development)
	Testing	Testing
English	Introduction of new skills	Remedial instruction
	Presentation of oral reports	Creative writing
	Reinforcement of skills	Preparation of oral reports
	Testing	Preparation of school newspaper Testing
Spelling	Introduction of new words	Clarifying the meaning of words
	Written practice	Analysis of words
	Testing	Extension of vocabulary for able
		Reduction of vocabulary for slow Testing
Handwriting	Introduction of letter form	
	Improvement of common errors	Remedial instruction
	Practice	

instructional program. After-school study halls, additional health services, recreation, and study groups for parents have developed from the school-community partnership. The enthusiastic help of the community combined with the efficiency of team teaching will, it is confidently believed, offer every child a better chance to learn.

Extension of Pittsburgh's Team Teaching Project for three years was made possible in June 1961 by an additional Ford Foundation grant of \$400,000 and a commitment of \$501,000 from school district funds. The extension includes three additional elementary schools—Belmar, Crescent, and Lincoln—in Homewood-Brushton, an area with problems similar to those of the Lower Hill schools; a junior high school, Herron Hill; and a junior-senior high school, Fifth Avenue. These high schools draw the majority of their pupils from the Lower Hill team teaching schools. Nine schools are now participating in the team

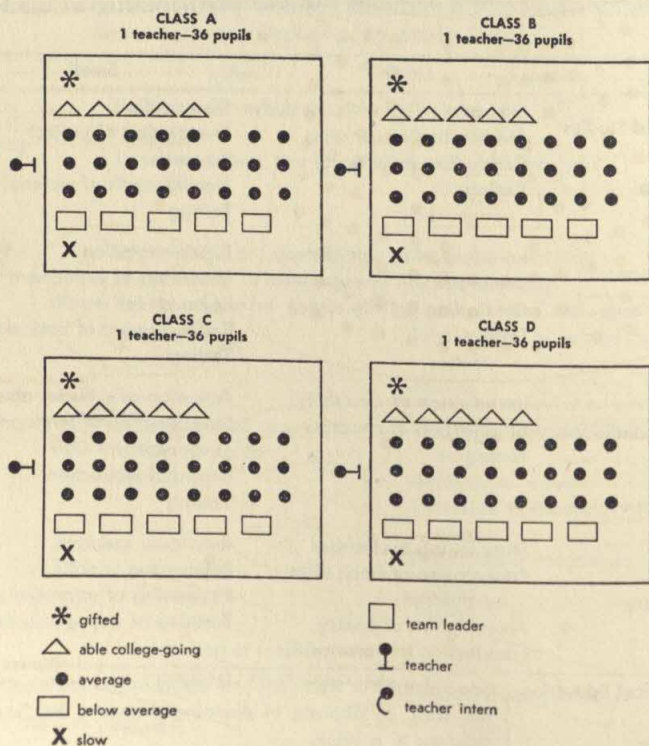
	Large	Small
Social Studies	Introduction to units of study Clarification of concepts Concluding activities of unit Testing	Study skills Preparation of project Research Simplification of material Testing
Science	Introduction to unit of study Demonstration of experiment Concluding activity of unit Testing	Experimentation Recording of experiment Research for reports Reinforcement of basic skills Testing
Arithmetic	Introduction of new skills Clarification of concepts Testing	Extension of skills for able Simplification of terms and concepts for slow Remedial instruction Testing
Library	Story telling by teacher Presentation of book talks by children Appreciation of poetry Introduction of library skills	Individual research Refinement of skills Deepening of appreciation Training of pupils as aides
Physical Education Art Music	Special subject teams are not teams in the technical sense but they collaborate in planning activities involving all children in a team.	

teaching program. They enroll 7,500 pupils—the largest number of pupils in team teaching anywhere in the United States. Fifth Avenue Junior-Senior High School will become the tenth school to join the project in September 1962.

Team teaching differs from traditional methods of teaching because pupils are instructed in groups of varying size by teams of teachers for appropriate lengths of time, rather than in average-sized classes, each taught by a single teacher for a fixed

FIGURE A

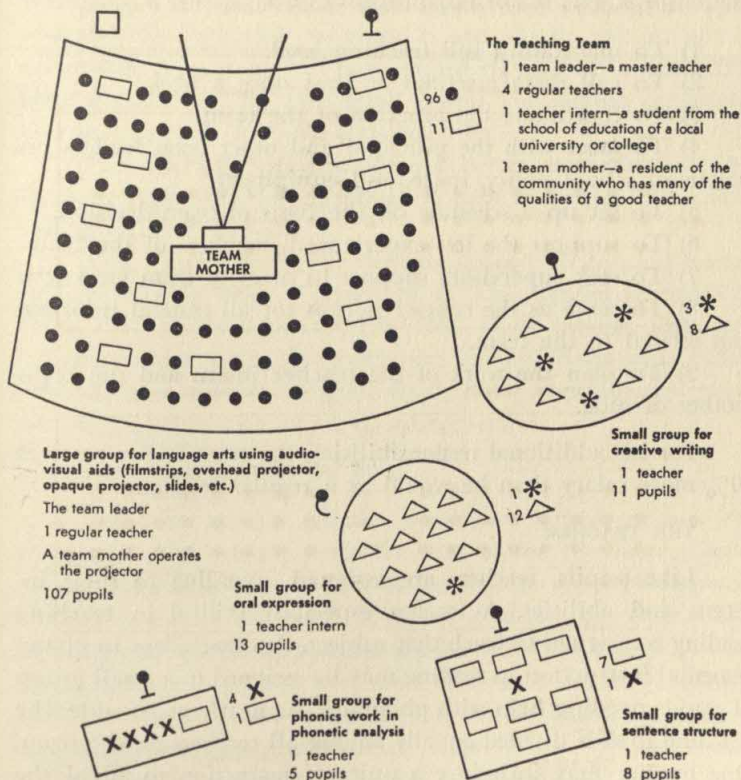
Traditional Classroom Plan
4 Teachers, Each With a Class of 36 Pupils (144 Pupils)



period of time. The groups vary in size according to the nature of the subject and the characteristics of the pupils. Pupils are assigned in large groups of 70 to 120 for subjects in which they can make normal progress, and in small groups of 5 to 15 for concentrated instruction in subjects in which they either need special help or have outstanding ability. A pupil may be assigned to one kind of group for one subject and to a different kind or

FIGURE B

**Team Teaching Plan for a Third-grade Class of 144 Pupils
in the Pittsburgh Public Schools**



size of group for another subject. He is always taught by the member of the team most competent in that subject, and he is continually encouraged to move along at his own optimum rate.

TEACHING TEAMS

THE TEAM LEADER

In Pittsburgh a team consists of a team leader, about four regular teachers, a teacher intern, and a team mother or aide.

The team leader directs and coordinates the activities of all team members and the pupils assigned to them. He is a master teacher, chosen for this assignment because he has demonstrated superior instructional competence and excellence in personal relationships. His major responsibilities are:

- 1) To maintain a full teaching load.
- 2) To call team meetings at least once a week.
- 3) To coordinate the program of the team.
- 4) To meet with the principal and other team leaders on matters of school policy, space, and equipment.
- 5) To set up a schedule on the basis of team decision.
- 6) To support the less experienced members of the team.
- 7) To seek supervisory support in areas of team weakness.
- 8) To serve as the contact person for all general information related to the team.
- 9) To plan the work of the teacher intern and the team mother or aide.

For his additional responsibilities, the team leader receives 10% more salary than he would as a regular teacher.

THE TEACHER

Like pupils, teachers are assigned according to their interests and abilities. A teacher especially skillful in teaching reading is assigned to teach that subject. Another adept in giving remedial instruction in reading may be assigned to a small group of pupils needing help with phonetics. As nearly as possible, the teaching load is divided equally among all teachers on the team. One teacher may introduce a unit of instruction to all of the

students in a single group. Later the children will be divided into small groups, each taught by a member of the team, to work on special projects, do research, or review the material presented to a large group.

This division of the work load among members of the team makes possible the assignment of fewer groups of pupils to a teacher, allowing more time for teachers to plan lessons, to keep abreast of new developments in their special fields, and to work together to devise improved methods of instruction.

THE TEACHER INTERN

Assisting the teachers with the instructional work of the group is a teacher intern, a senior from a local college or university. As a member of the team, he participates in its planning sessions. His beginning assignments are usually minor, but by the end of the term he will have gained experience in instructing large groups, working with small groups, conducting excursions, and participating in school-wide activities.

For this more diversified and better supervised student teaching experience, he is granted, in some instances, 3 to 6 more college credits than usual.

The Pittsburgh Public Schools trained 20 teacher interns each semester in 1960, or a total of 40. The number increased to 68 in 1961, and will reach 80 in 1962. Many interns, impressed by their team teaching experience in the Pittsburgh Public Schools, later apply for regular employment as permanent members of the teams with which they have served.

THE TEAM MOTHER OR AIDE

The team mother (in the elementary school) or aide (in the junior high school) performs most of the non-instructional duties which have been a part of the regular teacher's responsibility in the past. Through in-service training, she learns how to set up and operate such audio and visual aids as film projectors, tape recorders, overhead projectors, television sets, and opaque projectors; to duplicate materials; and to care for and distribute supplies. In workshops conducted by supervisors, the team mother or aide also learns how to assist in the activities program of the

primary grades, to help teachers make attractive bulletin board displays, and to assist in making certain instructional materials.

A team mother is paid \$228.25 a month and must reside in the community served by the school in which she works.

THE KINDS OF TEAMS

In Pittsburgh four kinds of teaching teams have been organized: primary, intermediate, special subject, and junior high. Each team meets at least once a week to determine the purpose, nature, and amount of large-group instruction, to decide upon follow-up activities, and to decide which children need specialized instruction.

Teams in the primary department are organized on a grade-level basis. There are a kindergarten-first grade team, a second-grade team, and a third-grade team. Each is comprised of all the teachers in a given grade, one of whom is designated as a team leader; a student intern; and a team mother.

Children are assigned to a homeroom on the basis of reading ability and receive most of their instruction from the same homeroom teacher. They may, however, be assigned to other teachers for large-group instruction, special remedial help, or advanced work.

The amount of time spent in team operation ranges from 10% to 85% during the week. The mean for the primary department falls at 27%. The balance of time is spent with the homeroom teacher on a self-contained basis.

Teams at the intermediate level are organized in the academic subjects. The intermediate team in each school consists of the language arts, social studies, science, arithmetic, and library teachers. In addition, there are a student intern and a team mother.

The instructional team meets pupils on the fourth-grade level and the slower fifth-grade level for language arts and social studies in the morning. Grade levels are crossed downward in reading; fifth-grade pupils, for example, may be assigned to a member of the team for fourth-grade reading. Richer experiences and additional opportunities are provided for the more able. In spelling, writing, and English much of the basic work is done in large groups, with individualized instruction being given in small

INTERMEDIATE FORMER PLAN — SEMI-PLATOON

Morning Schedule	A	Grade 4	Grade 4	Grade 5	Grade 6	These children reported to self-contained room for full program of language arts and social studies.
	B	Grade 4	Grade 5	Grade 6	Grade 6	
Afternoon Schedule	B	Grade 4	Grade 5	Grade 6	Grade 6	These children reported to self-contained room for full program of language arts and social studies.
	A	Grade 4	Grade 4	Grade 5	Grade 6	

TEAM TEACHING PLAN

Morning Schedule	Grade 4	Grade 4	Grade 4	Grade 5 (slow)	Children at same grade level are inter- changed among teachers for language arts and social studies.
Program is reversed in afternoon	Grade 5	Grade 5	Grade 6	Grade 6	Children at same grade level can be teamed for arithmetic and science. They move to specialists in art, music, library, and physical education.

groups. Groupings are made in science, arithmetic, and library for the afternoon, periods of art, music, and physical education are also scheduled at this time of day.

Pupils on the sixth-grade level and upper fifth-grade level meet the instructional team in the afternoon for language arts and social studies; in the morning for science, arithmetic, library, and special subjects.

Junior high school teams have been organized only in grade seven initially, with two subject-centered teams in 1961: language arts and social studies. Language arts teachers, a student intern, and an aide comprise one team, and similar social studies personnel constitute the other. There are three ability level tracks in each subject area. Children in the same track are met by the team during the same period and according to team decision may be reassigned if the nature of the presentation makes another type of grouping more beneficial. Teams will increase in size each year as children move up to new grade levels. Additional teams will be organized in science and arithmetic.

Special subject teams are not teams in the technical sense, but they do make possible the development of some interesting practices in the Lower Hill team schools. For example, the music, art, and physical education teachers from one school may get to-

gether from time to time to plan activities involving all the children in a team. And now and then special subject teachers in one school may collaborate with teams in other schools in planning a performance that would include the children in all or most of the Lower Hill team schools. This same plan will be followed in Homewood and Brushton as the team teaching program develops in that area.

OUTCOMES OF TEAM TEACHING

Pittsburgh's experiment in team teaching is still too new to point definitely to specific results achieved which can be measured and evaluated. However, there have been some improvements that merit mention.

Students are manifesting a greater desire to learn, and they are doing more serious study and work. Their instruction has become more individualized, and each is encouraged to progress at his own rate of speed. New measures are being devised to determine what that rate is and to assess more accurately students' educational potential. Their learning environment has been extended beyond the classroom to include broader and richer experiences. Through a constant program of cultural activities a whole new world of experiences is widening pupils' interests and heightening their educational aspirations.

With their individual skills and talents recognized, teachers also are showing more enthusiasm for their work and are making far greater use of their individual creative talents. Relieved of many non-professional chores, they have more time to teach, to think through and plan together what they are going to teach, to develop new and effective ways of teaching, and to know and help the children they teach. By working together in teams, they are developing professional partnerships of real value. Educational leadership is, likewise, becoming more dynamic, and lines of communication between administration and staff are being strengthened.

Active cooperation with team teaching is helping neighborhoods to raise their sights. It is helping parents to understand and accept more fully their responsibilities in the education of their children. The home and the community are developing a greater appreciation for education and the value of good schools.

A Critical Look at Team Teaching

Team teaching is based on the premise that any school reorganization must not only conserve the time and talents of teachers, but must be geared to improve the quality of teaching. It recognizes that while there has been insufficient research on how learning occurs, the role of the teacher has changed, from one who instructs to one who guides or sets up opportunities for the child to learn, largely on an individual basis.

Team teaching therefore advocates the organization of a group of teachers and auxiliary personnel to administer a learning unit of usually 100 or more children on either one-grade or multiple-grade levels.

INITIATING A PROGRAM

A school, moving into a team-teaching situation, first decides if the learning units are to be all levels of one grade, or groups of children in adjoining grades. A master teacher and compatible team members are then selected. Teams must be carefully planned so that there is a good balance of teachers with special interests in all areas of the curriculum.

Many schools advocate doing some team teaching before the actual program begins (perhaps having all the third grades work together on one activity) so that the new organization will not be so strange to pupils, parents, and teachers themselves. Other groups feel, however, that this procedure does not give a true picture of team teaching and is better left undone.

The master teacher is responsible for assigning the children to flexible groups in various learning areas, with the understanding that they will be changing from time to time. A child may be with one group in reading and with entirely different children in arithmetic, depending upon his progress in these areas. Or a child may work individually for several days and then group with some others for work on a special problem.

THE TEAM

One of the distinct features of team teaching is the great number of team meetings and discussions. One meeting of the team, for example, sets up tentative schoolday schedules, perhaps for as much as a week in advance. There are some periods when all the children will be together. Other times part of the children may be working individually or with teachers in small groups. Or the entire group may be divided among the members of the team. Other meetings (probably at least three a week) will be held to adjust schedules, allow for new developments, or care for special problems that arise.

Since each teacher in the team has a particular curriculum interest, she would probably have the major responsibility for that subject, although she might not teach all the groups. In a discipline as major as arithmetic, for example, the teacher may need help from other members of the team. The music or art specialist, however, is likely to teach all of these activities.

The entire team takes the responsibility for evaluating the children and reporting to parents. But the teacher who works most closely with the child in a particular discipline assumes the major role for evaluating him in that subject.

TOMORROW?

Team teaching, if widely adopted, could result in an entirely new pattern of education. Carried to the ultimate, a school would consist of a number of schools within a school.

In at least one district, there are plans for separate housing of these instructional groups. The school of tomorrow could be a series of small buildings surrounding a common play or service area.

Few, if any, experiments have gone this far. Schools that have set up teaching teams are involved in the mechanics of organization, communication, and the necessity of providing a series of sequential learning experiences in an orderly, directed manner.

Many benefits are claimed in varying degrees by the advocates of team teaching. They encompass every area of school organization and touch on many of the major problems recognized by educators today.

1) More individualized instruction gives greater provision for individual differences. Organization in a team-teaching plan fosters flexible grouping and an increase in individual learning patterns, with more time to give to each child.

2) Specilized abilities can be utilized. In a multiple-teacher organization, those teachers with interests in particular subject areas (science, music, art) will be primarily responsible for those subjects. Liberal-arts graduates with special talents can fit into the program on a part-time basis.

3) Responsibilities will be pinpointed. In the traditional school organization, responsibilities for improvement of instruction are vested in as many teachers as there are classrooms. With a team-teaching organization, the team chairmen (probably no more than six in a school of 600 pupils) are responsible for the children's learning progress.

4) The profession will tend to keep its better teachers. Opportunities for advancement will encourage teachers to stay in the profession.

5) Teacher manpower will be conserved. With grouping and regrouping, nonprofessional aides, and greater use of mechanized instruction and AV equipment, certified teachers will devote full time to instructional activities.

6) Many adverse results of teacher absences can be eliminated. Substitutes are often no more than high-grade sitters. In a teaching team, the absence of one member can often be compensated for by others on the team.

7) Personality clashes can be minimized. The day-after-day teacher-child associations of a one-teacher-to-a-class situation are bound to build up more tensions than when a team of teachers is dealing with a group.

8) Increased guidance. In a teaching-team organization, individual children are specifically assigned to a team member, and others on the team contribute to the evaluation.

9) Communication lags will be lessened. A one-teacher-per-class plan allows little opportunity for sharing methods, procedures, and materials. A teaching team is constantly discussing procedures and sharing ideas.

10) Integration of group and mechanized instruction and better use of AV facilities. Advocates of teaching machines realize

that schools must have many kinds of instruction. With a larger pupil unit, AV equipment can be placed permanently in the work area.

11) Teacher trainees can be better utilized. Student teachers on a team have the dual advantage of performing authentic roles and gaining financial assistance as they work.

12) A sound answer to supervision and in-service training. Supervision becomes direct and practical, and the added communication and planning provide in-service growth.

Advocates of team teaching recognize its problems. Here are some with rebuttals they offer.

1) Team teaching is an impractical program because few schools are physically geared for it. We should be seeking ways to use existing structures wisely.

Even relatively new construction can hardly be allowed to dictate future building. We must seek the best in education, unhampered by existing conditions.

2) In almost every pilot study of team teaching, the cost per child is more than in a traditional plan. This is hardly practical when there are still existing problems of oversized classrooms, low salaries, and insufficient physical equipment.

Education must move forward on a number of fronts, and wealthier districts can often research programs which may be later adapted to more modest situations.

3) Team teaching presents such involved complexities of scheduling that children may have less security than in a self-contained classroom.

Every new type of organization has similar problems until it has been tried long enough to establish working patterns. Once children are used to moving from group to group, their security will return.

4) The time needed for discussing and planning by members of the team is so great as to be almost prohibitive.

This is particularly acute at present because the experiments are traveling an uncharted course. Might it not also be true that there has been insufficient planning in the past? With clerical aides doing a teacher's noninstructional activity, there should be sufficient time for planning.

5) Present materials are not geared to this type of instruction.

This is partially true, but experiments are being made with existing materials, and research is under way to provide more suitable materials.

6) Reporting progress to parents in a set-up completely unfamiliar to them, involving many personalities, will be difficult and possibly inaccurate.

It is true that techniques for record-keeping and parent-reporting are yet to be perfected, but the use of clerical help eases the problem.

7) Present teachers college programs do not prepare students for team teaching.

Why not? The whole plan of student teaching is a kind of team teaching in itself.

The critics of team teaching offer these serious objections to the program.

1) Status pyramiding (teachers under a team chairman) does not establish a healthy climate. It tends to put a premium on qualities of organization and minimizes the values of teacher-pupil rapport.

2) The present roles of principal and curriculum director would be weakened. Each team chairman would tend to become an organizational and curriculum specialist. School budgets could hardly afford this diversification, even if it were desirable.

3) Team teaching can easily produce "more chiefs than Indians" with unhealthy competition between the "chiefs" and unfortunate comparisons by both parents and children.

4) The move for team teaching has been supported largely by foundations or other interests that subscribe to subject-matter goals and patterns of learning that do not best serve the recognized objectives of elementary education.

5) Team teaching would tend to have a divisive effect on both faculty and children, with a corresponding lessening of all-school activities and faculty in-service growth, and a loss in opportunity for children to develop in social situations.

6) The elementary child may tend to lose his identity in a

learning unit of 100 children or more. This could be particularly true of passive or indifferent children.

7) Advocates of team teaching stress the importance of having a single person who is responsible for the aims of the program, thus implying a lack of responsibility in the present organizations of elementary schools. If learning is to be individualized for maximum effectiveness, shouldn't the responsibility for such *stay* individualized for the same reason?

8) Team-teaching enthusiasts describe the operation in terms of structure of the team and organization of the school day, when the emphasis should be on patterns of learning and what is to be learned.

9) The presentation of learning on a mass basis, whether through educational TV or lecture, may be satisfactory for advanced high school or college students, but lacks the motivation so necessary at the elementary level.

10) Group dynamics are likely to suffer in a highly fluid organizational pattern, and opportunities for pupil leadership are lost in the complexities of the program and the size of the group.

WHERE IS IT TODAY?

• *Is team teaching a national issue?* Yes, the subject is being raised and discussed wherever educators meet, throughout the entire country.

• *Is it "hotter" in some areas than in others?* It is being considered chiefly in areas where schools have been selected for pilot studies. Four important clusters of interest are Southern California; Colorado; Wisconsin—Northern Illinois—Michigan; and suburban New York City—Southern New England.

• *Where can team-teaching programs be observed?* There may be an experimental program in your area. Here are a few: *Lexington, Mass.*, with three teams, six teachers each, each team teaching two grades.

Norwalk, Conn., with fourteen teams (seven with five members; several with four). Most of the teams teach two grades.

Claremont Graduate School, Claremont, Calif., has teams in several elementary schools in the area, each team caring for 150-200 children.

Also, the University of Wisconsin has placed teams in *West Bend*, *Janesville*, and *Madison*, where each team serves about ninety children.

- *Is there one best team plan and type of organization?* There are probably as many team plans as there are schools experimenting with team teaching. Some teams have as few as four members; others are as large as ten or twelve. How a team is organized varies with each program, and each team sets up its own daily schedule. At this point, no one is ready to claim any best way, and possibly no one ever will.

- *How is the success of the programs measured?* Theoretically, by every means of testing possible, but most evidence to date has been in the form of scores on standardized tests. Professional evaluations; interviews with pupils and teachers; studies by psychologists; and sociological measurements of community reaction are recognized as being necessary, and have been carried out to a limited extent.

- *Is there conclusive evidence to support acceptance of team teaching?* Not even its strongest advocates claim this, but certainly there is evidence to support continued research.

- *Have there been spectacular results in improved pupil achievement?* As in the case of teaching machines, performance is about equal to that resulting from good instruction, with the greatest gains occurring at high and low ability levels. But, advocates of team teaching point out that there are added advantages that cannot be measured by standardized tests.

- *As long as there are pilot studies under way, why not wait until conclusive results are established and then decide on a course of action?* Pilot studies can suggest direction and give sample courses of action, but the true test of a program comes when it is put into operation in a variety of local situations without financial or other support from outside sources.

- *Have schools attempting team-teaching experiments found existing facilities adequate?* In many cases, no. However, there is evidence that this is a positive result, since the demand for more

space has been provoked by increased activity on the part of the children.

• *Is team teaching directly related to teaching machines?* Yes and no. *Yes*, to the extent that teaching machines could be easily integrated into a team-teacher type of organization. *Yes*, in that one of the purposes of team teaching is to further individualize instruction. *No*, to the extent that teaching teams can and have already functioned with the same equipment as used in traditional classrooms.

SUMMARY

At this point, no one can satisfactorily predict the impact of present team-teaching experiments. In considering them, they should always be weighed against less spectacular but equally dedicated attempts to effect more satisfactory group arrangements.

Most of the team-teaching experiments have been subsidized to date, but even this should be viewed in perspective. Practically every educational experiment must receive subsidy of some kind over and beyond the normal operating costs.

If your school is considering the possibility of a new organizational pattern, start a file of materials for your library or curriculum materials center. Do not limit it to team teaching. Include every reference to any organizational experiment that is being carried on. These materials will give you a good basis for comparison. But, remember, in discussing team teaching versus other arrangements, there is only one true measure—the goals for education which you and your school district hope to achieve. It is highly questionable whether there is any single best system. The plan that will best fulfill your aims is the one you should consider.

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Team Teaching: A Review

Stuart E. Dean

Of all the ideas to come out of the current reappraisal of the ends and means of the elementary school, one of the fastest to capture both professional and public attention is the idea of team teaching. In the ordinary meaning of language the term suggests merely a kind of cooperation among teachers; but in the meaning it is now being given, it is much more. It is a way of organizing a school, a way of utilizing staff, a way of using space and equipment. It is, in short, a considered and pointed response,

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from the organizational angle, to the nationwide cry for quality in education.

Because the term "team teaching" has come to mean so much, most of us are not clear on what it does mean; its meaning depends all too much on who is speaking—or listening. Until we can arrive at some degree of consensus on a definition, we can at least consider how the idea grew and why, what claims are being made for it, and how it is working in practice.

BEHIND IT, PROBLEMS AND QUESTIONS

Nearly every change in the schools, now as always, is in response to the demands of the times. Our times are full of change—social, cultural, technological, economic, and international—and it has driven us to scrutinize the fundamental values of a free and universal public education. We are also in one of those recurring cycles of disenchantment with the structural organization of the school which periodically send us into fresh debate on the virtues of the present pattern—a pattern which for us in the elementary school today is usually influenced by what we call "the self-contained classroom" (a term which can mislead but which means no more than a classroom in which a number of pupils at the same grade level are taught nearly every subject by the same teacher).

Much of the present querulousness over the self-contained classroom is the result of the growing interest in subject matter—the call for more science, more mathematics, more languages—and the growing worry about the talented student, who many fear will be a heavy loser if his teacher has to spread himself too thin over too many subjects and too much diversity in pupil ability. As the stress on academic achievement has increased, the doubt has grown that one teacher can teach all subjects to all children with equal effectiveness and skill; and from that doubt there is only a step to the conviction that the subject-matter specialist has become necessary in the elementary school and that some way must be found to narrow the spread of capability in the group of pupils with which a teacher works.

The age-old questions about class size also have arisen: How large a group can a teacher handle effectively? does not the

optimum number vary with the circumstances? are there not some subjects that can be taught just as effectively to many at a time as to few—and some that cannot?

And at the same time concern has grown over certain circumstances that make the teaching profession less than attractive to many talented and creative persons. Much attention has been spent on finding ways to relieve teachers of the endless clerical nonteaching chores laid upon them in most schools, and on devising an organizational pattern that will make it possible to promote to positions of leadership—and to remunerate financially—those teachers who show extraordinary skill and ability.

NO ONE DEFINITION

There are only a few definitions of team teaching available, and none of them say quite the same thing. Taken together, however, they suggest that for some of these questions and problems team teaching may have an answer. In effect they suggest that team teaching can take various forms, but that whatever its variations it is essentially a way of organizing the instructional program which is applicable at either the secondary or the elementary level. Teams may work “vertically” through the school, i.e., at all grade levels in a single subject or closely related subjects; or they may work “horizontally,” i.e., at one grade level but in several subjects. For example, all teachers of the language arts may work as a team with all pupils from grades 7 through grade 12. Or all teachers in, say, grades 5 and 6 may work together, each one taking the chief responsibility for classes in his special field and probably doing most of the teaching in it but working always as a member of the team.

Even a small team has a leader, and many large teams have a hierarchy of levels that bestows different titles on its members—titles like “team leader,” “master teacher,” “senior teacher,” “regular teacher,” and “intern.” Many teams also include non-professional people, such as aides and clerks to assist the teachers.

Team teaching as it is being defined today is certainly more than a group of teachers who have amiably agreed to work together. The heart of it seems to be an almost unprecedented kind of unity: members of the team plan together, collaborate

constantly, communicate without restraint, and share sincerely and selflessly. Working together they can revise procedures and revamp programs to meet the educational needs of their pupils. In a sense the movement toward team teaching may be considered something of a revolt against the organizational restrictions of the past and a sharp reminder to all and sundry that the purpose of school administration is to serve the educational process, not to control it. One project director says: "We are questioning the status quo."

NEW, YET OLD

Is team teaching new? Yes—and no. The term itself is new; it first appeared in *Education Digest* in 1957. And there are inescapable signs of newness in current literature and in practices developing in some schools. History, however, reminds us of other forms of elementary school organization that began with the same goals as team teaching—the Platoon School, the Winnetka Plan, the Pueblo Plan, to mention a few. The Cooperative Group Plan, formulated in the 1930's by J. F. Hosis, who felt the same disquietude about elementary school structure that impels us to experiment today, is probably the most recent prototype; in this plan, small groups of teachers together organized the work for a group of children within a range of not more than three grades, and each group had its own chairman who also served in a supervisory capacity.

It is generally agreed, however, that the first recorded project in team teaching was begun in 1957 at the Franklin School in Lexington, Mass. This is one of the projects sponsored by Harvard University's School and University Program for Research and Development—SUPRAD—a program aimed at bridging the gap between university research and school practice.

The Franklin School project has been followed by many others in scattered parts of the country. Estimates of the number and substance of these experiments vary, but it seems fairly reasonable to say that they are to be found now in at least 100 communities, in both elementary and secondary schools.

Some of these projects have been much written about, in both professional and popular publications—for example, the

projects in Norwalk, Conn.; Flint, Mich.; Baltimore, Md.; Jefferson County, Colo.; Evanston Township, Ill.; Ft. Wayne, Ind.; Newton, Mass.; Montgomery County, Md.; and Palo Alto, Calif. Some are linked with universities, such as Harvard, Chicago, Stanford, and Wisconsin. A great many of these have been encouraged and assisted by the Commission on the Experimental Study of the Utilization of the Staff in the Secondary Schools, appointed by the National Association of Secondary School Principals and supported by the Fund for the Advancement of Education.

HOW ONE SCHOOL DOES IT

The very flexibility that characterizes team teaching makes it hard for any one to draw with firm lines a picture of how, precisely, a team works; it makes it in fact impossible, for no two teams are likely to work in the same way. That they do not is reenforcement for the point of view that team teaching is more of an organizational idea than a set of procedures and practices. It is moreover an idea which a group of teachers must understand and accept—to which they must in fact commit themselves—before they can work as a team; an idea which they must also adapt to their own personalities and abilities and to the personalities and needs of their pupils.

Claremont, Calif., has published a booklet which describes how its team-teaching project operates. But anyone who examines this project as an example should first remind himself that the Claremont way is not necessarily typical. From project to project teams differ both in the number of their constituents and in the way these constituents complement each other. In general, however, the following summary of the Claremont plan may be considered a reasonable review of how a team in an elementary school is organized and how it works.

PUPILS

For each team there are about 150 to 200 pupils, drawn from a particular age or grade group. For more flexible grouping of pupils and easier movements from one level to another, the school may be divided into 3 parts: early elementary, middle,

and upper. But whatever arrangement the school makes for flexible grouping, the pupils assigned to each teaching team form a distinct group within the school organization.

FACULTY

Each team has 5 to 7 classroom teachers with both general and special abilities. The school tries to select teachers who have already specialized, or plan to specialize, in certain subjects in the elementary school curriculum. Some team members also specialize in certain skills, such as giving tests, interpreting results of group testing, and giving remedial instruction. Teams meet regularly to exchange ideas, share information, clarify their purposes, and organize their programs. They decide on the size of each instructional group and how the specialist will handle it.

TEAM LEADER

The team leader, who is either elected or appointed, assumes responsibility for the way in which the team works and gives it leadership in improving instruction and guidance. He receives an additional stipend; and from time to time an auxiliary teacher relieves him of teaching, to give him time for his added responsibilities.

AUXILIARY TEACHER

The auxiliary teacher is a substitute teacher assigned specifically to the team. He not only substitutes for teachers when they are absent but also teaches approximately 20 full days a year to give teachers time for planning. His service makes the schedule more flexible; and, since he is a member of the team and attends all meetings, he is able to preserve the continuity of instruction in a teacher's absence.

TEACHER AIDE

The teacher aide does some of the clerical and routine work connected with teaching, such as correcting tests and marking papers, arranging for field trips, supervising study periods, and giving makeup examinations. Sometimes he tutors individual pupils or works with small groups, and does research for teachers on curriculum problems.

CITIZENS

The team draws on citizens with special skill and knowledge. Scientists, mathematicians, story-tellers, children's librarians, artists, musicians, travellers, and others help the team enrich the curriculum; for example, they instruct small groups and lead discussions, either during school hours or at regular sessions after hours.

INTERN TEACHERS

Intern teachers are an integral part of some teams. At the same time that they are being introduced to actual teaching, they are giving support to seasoned teachers.

BUILDINGS TO MATCH

The Claremont plan of team teaching—in fact any plan of true team teaching—obviously needs special arrangements in both space and equipment. Several observers already have commented on the limitations and restrictions the traditional type of school facility imposes on a full-scale program. "Conventionally constructed school buildings," a SUPRAD report says, "with their rows of equally sized self-contained cells divided by immovable partitions do not meet the needs of most effective team operation."

What kind of school will it have to be? One thing, for certain—a school with flexibility built into nearly every cubic inch. A number of actual and proposed plans for elementary schools and junior high schools can be found in *Schools for Team Teaching*, published by the Educational Facilities Laboratory; but the Laboratory does not say that they are final solutions to the problems posed by the team teaching. It calls them experiments, planned for an experiment, but goes on to say that "both the educational idea and the schools planned for it represent new and adventurous thinking, attempts to meet this country's mounting educational challenge." Among the schools it describes are the Estabrook Elementary School in Lexington, Mass., and the Dundee Elementary School in Greenwich, Conn.

Whether schools that fit team teaching cost more to build

than the usual kind of school has not yet been determined, but informed estimates say they do. Robert H. Anderson of Harvard University, who directs the Franklin School project, says, "It is hard to predict whether the radically different buildings needed for team teaching will be more expensive. . . . My guess is that they will cost about 10 percent more than 'standard' obsolete buildings, although an ingenious acoustical invention could conceivably reverse the cost picture." Arthur D. Morse, in his *Schools of Tomorrow—Today*, says that team teaching will raise the cost of operating a school, but not because of the building: "Although the new building will feature versatility, it will cost approximately the same as the traditional school. But team teaching with its upgraded salary scales is likely to add 10 to 15 percent to the cost . . ."

TOO SOON FOR EVALUATION

The team-teaching idea has been in practice for so little time in so few communities that conclusive evidence of its effectiveness has not had time to accumulate. After all, the oldest project, in Franklin School, is only 4 years old.

And it is out of Franklin that most of the evaluation has come. Dr. Anderson's subjective summary indicates that team teaching is not "disadvantageous" to children, that its results warrant further experimentation and refinement of proceedings. As far as its effects on pupils go—in growth of personality, in adjustment and achievement—he thinks them "no less satisfactory" than the effects in more traditional setting. He has found no evidence that children suffer emotionally or academically or in any way feel "lost" in the process. The reactions of the teachers have been favorable. Parents of the children, according to Mr. Morse's report on Franklin School, seem more willing to express satisfaction than "the cautious officials of SUPRAD." Almost all say that their children enjoy their team-taught schooling and benefit from it.

The next logical step, obviously, is to put team teaching to the test. Plans for investigative studies and research projects are already being discussed in a number of quarters, and some proposals have been submitted to the Office of Education for

inclusion in its cooperative research program. In due time, no doubt, more objective bases for judging the worth of team teaching will be at hand; but present evaluation is almost entirely in the realm of personal opinion and speculation.

Opinions and speculations, however, despite their shortcomings as a body of evidence, are highly worth reviewing: many of them come from men and women renowned for their sound judgment; many have been formed against a background of long professional experience. That some of them are diametrically opposed should not disturb anyone: this is healthy evidence of the questioning and weighing that must go on until such time as research puts an end to uncertainties.

CLAIMS AND QUESTIONS

Opinions about team teaching are not sharply divided into two camps. Some of the proponents are as ready as the critics to point out practical problems and raise provocative questions; and many of the critics concede that team teaching promises much, at least in theory.

Among the advantages being claimed for team teaching are these:

- It is good organization. As a plan of organizing for instruction, it preserves the virtue and avoids the weakness of both the self-contained classroom and its opposite number, departmentalized instruction; it makes it possible to have every subject taught by a specialist, yet it preserves the interrelatedness of subjects and learning. It makes the most strategic use of each teacher's knowledge and skill, accommodates different levels of teacher responsibility and competence.

- The pupil profits. The pupil, having the academic advantage of being taught each subject by a teacher strong in it, is more likely to find scholarship attractive, to be challenged to work to capacity. His interests, abilities, and needs are more likely to be discovered when he is taught by two or more teachers working closely together than when he is taught by one teacher working more or less alone; and the flexible grouping and regrouping that characterizes many team-teaching programs pro-

vides more realistically for pupil differences than straight "ability" grouping. The quality of instruction that a pupil receives during any one term or school year does not depend on the competence of a single teacher.

- The staff profits. The teacher gets more professional and personal stimulation when he works on a team than when he works in isolation. There is better communication among staff members, more motivation for continuous curriculum improvement, more cooperative planning. Because the team places a premium on unusual ability and skill and on exceptional qualities of leadership, it encourages teachers to grow professionally.

- The school profits. There is more opportunity for flexible schedules and efficient use of space, materials, and equipment; in other words, the administration is encouraged to respond to changing needs rather than to be restrictive. Well-qualified teachers are more likely to be attracted to the school. Because the team has room for different levels of teaching ability, it makes it easier for the school to peg teachers' salaries to professional skill and leadership; easier, too, to provide inservice training for inexperienced teachers.

Among the many questions being raised in connection with team teaching are these:

- What are we talking about? Does not the present loose application of labels and terms lead to a possibility that the basic concepts of team teaching will be misused and abused? If, before we have precise definition and full understanding of team teaching, we leap aboard the bandwagon, do we not run the risk of missing entirely its idealistic purposes?

- Are the assumptions sound? On what basis have we judged inadequate the present methods of school organization and instruction? Can we safely assume that all teachers are qualified by temperament and training to work effectively as members of a team? Is the theory valid that some things can be taught more efficiently to large groups? Are we certain that children learn more from a subject-matter specialist than from a generalist?

- How do we surmount the practical difficulties? How can we get enough teachers specially trained in subject matter and team relationships? Enough skilled and gifted team leaders? How

will we meet the increased salary and operating costs? How serious are the limitations of our present school buildings for housing this sort of program?

• Could team teaching become form without substance? Does not history suggest that our schools have a tendency to become so preoccupied with innovations that they make them the ends rather than the means they were conceived to be? Should not team teaching be evaluated on the basis of its contributions to classroom practice and not judged on the basis of administrative efficiency, popular expediency, or the glamor given by publicity? Is there not an ever-present danger that we will over-emphasize organization and, in so doing, distort our sense of the educational values of the elementary school?

Team Teaching: An Assessment

Harold D. Drummond

Interest in team teaching has grown rapidly since 1958. In that year the National Association of Secondary-School Principals devoted the January issue of *The Bulletin* to the work of its Commission on the Experimental Study of the Staff in the Secondary School (NASSP, 1958). In the two-year period preceding that issue (1955-57), not a single article on the subject of team teaching was listed in the *Education Index*. In the following two-year period, by contrast, the *Index* listed eight articles. Between July 1959 and June 1960, 35 articles appeared in published journals and, through June 1961, an additional 19 entries had been listed. No doubt the output will continue to mount, for everyone seems to want to jump on the bandwagon of "team teaching" (Bush).

At the moment, it appears likely that in hundreds of second-

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ary schools and in many elementary schools the instructional staffs are doing something which they call team teaching. What types of team teaching are reported by school systems? What are characteristics of present developments? What advantages are claimed for team teaching, and what problems are inherent in the structures already adopted?

TYPES OF TEAM TEACHING

The education profession has suffered for years because it has lacked precise terminology. Team teaching is another example—the term already has almost as many meanings as there are school systems doing something with it. At present, there appear to be at least the following five types of team teaching in various stages of development and/or experimentation. Variations from these types are, of course, myriad.

1) *A hierarchy of teaching assignments.* Several school systems (see Anderson, Johnson, Stone) have attempted to develop instructional teams which are based upon a specified hierarchy of teaching assignments. At the top of the hierarchy is a team leader who is a person with superior educational preparation, several years of teaching experience, and leadership qualities. The team leader often is given a lighter teaching load and a salary commensurate with the leadership responsibilities he is asked to assume. The team, in school systems developing hierarchal assignments, usually consists of senior teachers (who receive extra pay, but not as much as that received by the team leader), regular teachers (often those without previous experience or those new to the system), part-time teaching assistants, and clerical aides. In order to cover the costs of the increased salaries for leadership and for clerical help, additional pupils are assigned to the team—usually at least one extra class section for three or four certified teachers.

2) *Coordinate- or co-teaching.* In school systems using this approach, teachers are assigned to a large group of pupils (usually a multiple of the number the teachers would have under more traditional assignments; e.g., two teachers to 60 youngsters, three teachers to 90) and they plan together *as peers* how best to provide for the pupils for whom they are responsible. As in the

previously described "hierarchy" plan, sometimes instruction is provided to the entire group by one teacher. Sometimes one teacher works with most of the youngsters in the group while the other works with a small group of the gifted or with those needing remedial instruction. Sometimes each of the teachers has a "normal-sized" group of about 30 pupils each. Attempts are made in the planning to utilize to the fullest extent the strengths of each teacher. Such plans usually have been described as existing within established departments at secondary school levels or at grade levels in elementary schools.

3) *Team teaching across departmental lines.* In several junior and senior high schools attempts have been made to improve the program, and hopefully to improve learning, by devising schedules for instructional teams which provide a two- or three-period block of related content (e.g., American history, American literature). Students have, normally, one period with the social studies teacher, followed by one period with the English teacher (or the reverse). Often, when desirable, the two groups are combined for the double period—as for a field trip, orientation to a new unit, lecture by an outstanding resource person, visual aids, and the like. The teachers have at least one free period at the same hour so that joint planning is possible.

4) *Part- or full-time helpers.* Many descriptions of team teaching indicate a fairly standard teaching role for the regularly certificated teacher, but seek to improve his teaching effectiveness by providing additional help of various kinds, including instructional secretaries, theme or paper correctors, laboratory assistants, learning materials coordinators, and audio-visual experts. To employ the additional personnel without substantial increases in instructional costs, teachers usually are asked to accept responsibility for a larger number of learners than normal (usually 35 to 40). The teacher retains active control of the planning and most instructional phases of teaching, utilizing the helpers on the team for particular tasks of a more routine nature.

5) *Trading groups.* In an informal way this method of capitalizing on the particular strengths of teachers has been utilized for years by elementary school teachers. The teachers have said, in essence, "If you'll take my art—you're good in it and I'm not—I'll take your music," or "If you'll take my science,

I'll take your social studies." Until recently, such "trading" was rare at the secondary school level, but it may be growing now as a result of the staff utilization studies.

Several reports indicate that two or three teachers of a particular subject, such as general science, plan their work so that they trade groups for particular units of content. The trading is done, ostensibly, to make certain that the groups receive instruction from the best-qualified teacher of the team, and also to ensure that the teachers have an opportunity to provide instruction geared to their own interests and competencies.

AN ASSESSMENT

Any attempt at assessment of educational practices is, of necessity, made from a value base. In most previously published reports, an attempt has been made to assess practices in team teaching by utilizing three types of data: achievement as measured by standardized or by locally-constructed tests, teacher opinions (sometimes buttressed by student and parent opinions), and per-pupil costs. The data collected and reported generally indicate: (a) Students do as well or perhaps a little better on standardized tests when taught by teaching teams of the various types described. Usually the obtained differences are not significant when fairly sophisticated statistical measures are employed to analyze the data. (b) Teachers, generally, are willing to continue the team approach, although there are numerous indications that not all teachers make good team members. Increasingly, reports indicate that differences among teachers need to be recognized equally as much as do variations among learners (see Hanvey and Tenenberg, Weiss). The reports seem to show a feeling of, "We are working on the frontier—trying to find a better way of proceeding," which undoubtedly has positive value for heightened morale. The increased workloads (meetings, meetings, meetings!) seem to have been shouldered with enthusiasm by the participants. In the long pull, better ways of equalizing instructional loads probably will need to be developed or morale may slip. (c) Students and their parents generally favor what has been tried. Many learners are at first skeptical or negative, but

as teachers gain confidence and competence in their changed roles, reports from them indicate positive support for the team approach. (d) Costs rise slightly. The extent of the increased costs usually is not specifically reported. Three ways of bearing the increased costs have been utilized: increased local appropriations, employing fewer qualified teachers and increasing the pupil-teacher ratio, and support from foundations. Many of the additional costs have been the result of improved instructional resources—books, films, overhead projectors, and the like.

While these criteria of achievement, opinion, and cost are measurable, to some extent at least, they do not necessarily provide good bases for assessment unless one subscribes to the following premises: (a) that education is best which results in highest achievement as measured by tests, standardized or otherwise; (b) that education is best which results in expressed teacher satisfaction with administrative practices (and perhaps student and parent approval also); (c) that education is best which increases present per-pupil costs only slightly and may in time tend to lower costs. These premises seem to be questionable as criteria for a profession to use in assessing the worth of an innovation.

The assessment which follows, also made from a value base, is developed to the extent possible on the following assumptions: (a) learning of high quality requires interaction between the teacher and the learner and between the learner and other learners; (b) learning of high quality is more likely to occur when teachers are patient, understanding, intellectually alert, and free to make decisions based upon their best professional judgment; (c) what is learned must be used (more functionally than on an examination) or before long it will not be known.

These assumptions obviously eliminate cost as a function of quality (although most administrators at present must consider the cost-quality factor) because the writer assumes that this nation *can* afford instruction of high quality for its children and youth. The assumptions also eliminate teacher opinions as expressed on questionnaires or verbally to members of the administrative and supervisory staffs. What is essential for effective learning is not necessarily highly correlated with what teachers prefer. To state the assumption another way, what teachers consider to be

good teaching may not result in the most effective learning. The spotlight should be focused on the *learning process* rather than on teaching.

These assumptions also eliminate achievement as measured by tests. Teachers know what most achievement tests contain or are likely to contain. Using almost any organizational structure, they can, therefore, make sure that the learners make about average gains in achievement. Obviously, any structure which results in *marked* improvement on standardized tests should be seriously considered. Whether the instructional technique or structure should be adopted widely, even if better test results are obtained, is another matter—a matter for professional judgment. Students who score higher on standardized tests, in other words, are not necessarily better educated.

What assessment can be made of the various types of team teaching using the value assumption that good learning results from the interaction of learner and learners with patient, understanding, intellectually alert, free teachers who see that what is learned is used? Nine “advantages” consistently reported for team teaching are given in italics below. In each instance, some comments based upon the value orientation of the writer follow in regular type.

- *Few pupils are limited to the instructional competence of a single teacher at a grade level or in a department at the secondary level.* As a result, few teachers in this arrangement get to know individual pupils as well as in traditional arrangements. Interaction between the superior teachers and the learners (especially in the hierarchal plan) is minimal. Personal contacts of learners with teachers tend to be limited to teachers of lesser competence and experience.

- *Persons most highly qualified provide instruction to large groups, thus saving much time for the total staff which can be used for more effective planning and for instruction in smaller-than-average groups.* Questions learners have during the lecture must be deferred until a later time. Moreover, what the teacher wants to teach is not necessarily what the pupil needs or wants to learn. The learner may, in fact, already know what is being presented to a large group. The same problem exists, of course,

when teachers lecture to normal-sized groups. May there not be a better way to teach?

- *In presentations to large groups, better use is made of visual aids because more time can be devoted to the preparation of needed materials by specially-qualified team members.* Substituting a picture of a magnet on an overhead projector as a lecturer explains how it works (as was shown recently in the television report, "The Influential Americans") may result in undesirable verbalization not sufficiently based on real, firsthand experiences by the learners themselves. Skillful presentations do not necessarily result in effective learning experiences.

- *More uniformity in instruction is achieved because all students are taught, both in the large groups and the small, by the same teachers. Sections pupils are assigned to thus make less difference than in traditionally organized schools.* Uniformity in instruction is not necessarily desirable. The degree of desirability depends largely upon how much flexibility is provided for the very bright students and the slow learners. Individualization of instruction, whether in traditional or team approaches to teaching, is a valid and desirable goal. To the degree that attention to individual differences is provided (this varies in different team teaching plans), the learning is likely to be effective.

- *Less repetition is required of teachers, especially at the secondary level where several sections of the same class have been traditionally assigned.* Repeating a lecture to several sections of the same class probably is wasteful—but getting to know the pupil is *essential* for interaction. Almost all reports indicate that less discussion occurs as team teaching is undertaken. Perhaps more "ground" can be covered, but that is no guarantee that more learning has taken place.

- *Teacher competencies are better utilized.* Instruction tends to become more formal, less spontaneous. In the hierarchal plan, young, inexperienced teachers undoubtedly have more opportunity to learn from team leaders, but the conception is supported that superior teachers lecture to large groups while teachers drawing lower salaries and with less teaching experience work with smaller groups. Learners, as a result, get individual help from teachers who probably are least qualified to give it. These weaknesses, it should be noted, are not apparent in the

coordinate and interdepartmental plans where teachers operate as peers.

- *Better provisions are made for helpers—librarians, audio-visual experts, clerks, and the like—to do routine tasks.* A definite boon to the profession! The only problem which should be noted: effective coordination of such helpers takes time. In the opinion of this analyst, such help should and could be provided regardless of the structure for teaching developed by the school system.

- *Group size is clearly related to function. Large groups are formed for activities which are effective with large groups, and vice versa.* This concept makes sense. In the judgment of this assessor, the "coordinate" and the "across departmental lines" teams have the greatest possibility of built-in flexibility at this point. The "hierarchal plan," because of the specified roles, probably has the least likelihood of achieving flexibility in grouping.

- *Of necessity, students assume more responsibility for their own learning. As more and more instruction is provided in large groups, a greater share of the school day is given to independent study on the part of learners.* If education is effective, the more mature the learner, the more able to guide and direct his own learning endeavors he should be. Generally, then, this claimed advantage of team teaching is desirable. Perhaps even a greater measure of independence could be achieved other ways, however.

A FINAL WORD

The worth of attempts at team teaching is not proven to date. The main value of the attempts which have been made thus far undoubtedly lies in the staff growth which has occurred as a result of the experimentation.

Experimentation should be continued. Much more sophisticated research designs should be used, so that variables in the situations can be more carefully controlled. While team teaching is being tested more carefully, some school systems (perhaps the same ones) should also be testing other approaches to improvement of learning, such as: assigning not more than 20 pupils to a teacher, shortening the teacher-directed part of the school

day and lengthening the pupil-directed portions of the day, utilizing more programmed materials as these become available, basing more instruction on the "workshop way of learning," orienting in-service education programs for teachers more toward intellectual growth, providing better learning materials centers and instructional secretaries in every school, and lengthening the school year for a larger number of teachers so that more time for planning and preparation is available.

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Team Teaching: Fundamental Change or Passing Fancy?

Malcolm P. Douglass

What will be the future of Team Teaching? Judging from its present attractiveness to a large segment of the public and the profession, it appears that it will soon be given a trial of one kind or another in virtually every school district in California.

What evidence is there to support such an enthusiastic response? Do the organizational arrangements for teaching and learning provoked by the team teaching concept bring about

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fundamental changes which will benefit children and society? Or will they, in a few years, merely leave vestigial remains to remind us of our folly—of one more venture into the land of fad?

As we look at team teaching today, it should be clear that it can only be provided for, not guaranteed. And it can only be provided for when three organizational elements are brought into existence within a school; *i.e.*, when (1) there is an identifiable group of students taught by (2) a small faculty group with complementary talents assisted by (3) certain additional persons, including teacher aides, talented citizens, and others. In a very real sense, the team of students, teachers, and others, comprises a school within a school. How they work together in this setting is properly termed *team teaching*.

It is the responsibility of the teachers on the team to plan and teach the student group in one or more areas of the school curriculum. At the elementary level this usually means that the team of teachers will be responsible for the total program for one or more grades in the school. At the secondary level, the team may be composed of teachers from only one subject matter area; or it may deal with two, three, or more. Those people who assist the student-teacher team are the teacher aides, talented citizens, and others in the school and school community who may be available for some special purpose.

In the daily operation of the team, modern instructional devices and flexible grouping will be employed. In most team teaching programs, therefore, we see considerable experimentation with educational television, teaching machines, "new" mathematics programs, and the like. Similarly, we notice such practices as small and large group instruction, situations in which two teachers instruct a group or one teacher will conduct large group sessions in a particular subject area, and frequent re-grouping according to ability or special interests.

SOME START WITHOUT PREPARATION

During the past two or three years, the concept of team teaching has become increasingly attractive throughout the profession. Today, we are witnessing such a surge of interest that many school people are embarking upon their own programs—

sans outside financing and often with little, if any, assistance from others who have had experience with team teaching. To these people, the ideas associated with the team teaching concept are so "right" and the desire to improve educational opportunities so strong that they literally cannot be stopped.

Many of the team teaching programs thus being developed are soundly conceived and will be well executed. However, it is quite apparent, as one looks about our own State, and indeed across the nation, that the bandwagon is rolling and many people are too anxious to get aboard. In their eagerness, they are lumping virtually any departure from the conventional school pattern under the term "team teaching." A simple cooperative teaching plan between two or three teachers, for example, becomes team teaching. A non-graded or a continuous progress plan for an elementary school becomes team teaching. Departmental meetings—hardly new at the secondary level—suddenly become team teaching. And so on.

What, then, does team teaching look like in action? What are its presumed advantages over typically organized elementary and secondary schools? What evidence do we have of its successes and failures? And what should school people consider as they contemplate the values of team teaching for their own school and, indeed, for their own teaching?

The teaching team, as we have indicated, consists of (1) a distinct student group, (2) a small faculty group with complementary talents responsible for teaching the student group, and (3) certain persons who assist the teachers and students. The manner in which these elements in a teaching team interact can vary widely, of course. Hence, it is impossible to describe a "package" arrangement which can be applied anywhere and everywhere. In the project sponsored by the Claremont Graduate School, with which the writer is most familiar, there have been, over the last four years, 21 secondary teams and 12 elementary ones. Each has been somewhat different. Multiply the extent of these differences by all of the team teaching projects under way around the country, probably several thousand, and one can readily understand why there is confusion over what is really meant by the term team teaching.

Speaking in quite general terms, then, the teaching teams associated with the Claremont project are comprised of from 120

to 180 pupils at the elementary level and from 90 to 180 students at the secondary level. Teacher-pupil ratio is the same as is found in conventionally organized classrooms—30 or 35 to 1. Therefore, elementary teams are composed of from four to six teachers; secondary teams from three to six teachers. Each team of teachers elects or has chosen for it by its administration a team leader. Some of the teams include intern teachers, but in the main, team membership as far as professional people are concerned is made up of fully certified teachers. The third element in the structure of the team, those who assist students and teachers, consists of the teacher aide, auxiliary teacher (at the elementary level only), and various talented citizens selected by the team for their ability to make specialized contributions to the instructional program planned by the team. The teacher aide is a non-certificated person drawn from the community who works at the direction of the team in a part-time capacity. The auxiliary teacher is a certificated person who provides 20 days of released time for members of the elementary teams for planning, research, visitations, and other activities deemed worthwhile by the team.

Both elementary and secondary teams draw extensively upon talented members of the school community at various times during the year. Local citizens may assist with some specific aspect of the instructional program, such as delivering a talk, or giving a demonstration; they may lead student study groups during or after regular school hours; or they may assist in remedial work over an extended period of time where individual attention is the prime need of the student. Talents represented in the community have been found to be more varied, useful to the school, and freely given than even the most optimistic planners of team teaching programs anticipated.

In way of contrast, mention might be made of different types of team organization as they are seen over the United States. In the program being conducted jointly by the University of Wisconsin and nearby school districts, for example, teams consist of from 60 to 80 children at the elementary level. Two regularly certificated teachers and two intern teachers, in addition to the teacher aide, make up the team. Community resources are also employed extensively. In team programs sponsored jointly by school districts and Harvard University under way in the greater Boston area, teams consist of about the same number of students

and teachers as their are at Claremont. However, there are supplementary personnel, such as special subject teachers at the elementary level, who provide opportunities for re-grouping, especially in small groups, and released time for teachers for planning and research. In secondary teams, more large group instruction is planned than is presently true in most programs seen in the western part of the United States.

Since team teaching itself is nothing more than the total pattern of educational experiences planned for the students on the team, the quality of those experiences obviously cannot exceed the talents, collectively and individually deployed, which exist among the team teachers and their non-professional associates. It is, therefore, in large measure true that there is nothing in conventionally organized schools which precludes teaching students in those ways which have been associated with the concept of team teaching, for example, large and small group instruction, the use of modern instructional tools, flexible groupings, and use of talented citizens. The fact is, for whatever reasons one wishes to assign, that these kinds of educational experiences appear more often to develop from the teaching team arrangement than in the conventionally organized school. However, when this is said, immediate qualification is necessary in at least two important respects. First, do they result directly from team teaching, or are there other elements at work, such as the fact the program is "experimental," and motivation for teaching and learning somewhat artificial? In other words, how important is the Hawthorne Effect in team teaching? And second, do these educational experiences actually provide superior learning? We do not really have an answer to the first question. But one may be coming shortly from those school districts which are striking out on their own with the idea. As for the second question, too little is known, but there are some research straws in the wind which are commented upon below.

SOME PRESUMED ADVANTAGES OF TEAM TEACHING

Since team teaching seeks to improve education across a broad front, the hypothetical advantages attributed to it are global in nature. It is hypothesized, therefore, that the education

of the child or young adult will be enhanced because the teaching team organization will encourage, to a greater degree than usual, the following:¹

- Practical and effective in-service education through frequent team meetings.
- Marked success in inducting new teachers into school systems by using interns as team teachers.
- The use of aides to release teachers from routine duties.
- Teacher involvement in planning and developing curriculum because of team structure.
- Recognition for outstanding teachers through selection of team teachers and election of leaders.
- Because of team structure, the ability to group and regroup frequently by achievement, ability, or interest levels.
- Because of team structure, the ability of the team to form large and small groups for instruction, from one teacher for one student, to one teacher for two hundred students.
- At the elementary level, the ability to develop exchange teaching opportunities among the team teachers in order to exploit teachers' special talents, knowledge, and training.
- Improved guidance from the planned exchange of information about students and the atmosphere of fellowship within the team.
- Improved correlation of subject matter because of cooperative planning in team meetings.
- Through team leaders and team meetings, the identification and use of talented citizens and other educational resources of the community.
- The planning of field trips for team students in team meetings and the reduction of interference from field trips with other teachers' classes.
- Because of their children's common experiences, increased interest and involvement of parents.
- Because teams can be kept together for more than one school year, the organization to develop sequences of content and intellectual process.
- Improved climate of motivation because of the accent upon individual identity and team spirit.

¹ Claremont Graduate School, "Annual Report of the Teaching Team Program, 1961-62," (John A. Brownell, editor), Claremont, California, 1963.

- Because of the team structure, the best use of teacher talent which should yield the highest quality of instruction.
- Because of varied groupings and presentations, greater student interest.

No simple means exist for confirming these hypotheses. To make matters worse, most of the projects in team teaching supported out of foundation grants have provided for a minimal evaluation program. Rather than formal research, experience derived from field trials has been deemed a sufficiently satisfactory indicator of success—or failure. Such evidence should not be depreciated entirely—just taken with a grain of salt. And the condition itself suggests the need for more controlled research before hasty judgments are entered *vis-à-vis* the future and worth of team teaching.

SOME EVALUATIVE STRAWS IN THE WIND

Even within these restrictions, some pieces of reasonably objective evidence are becoming available. For example, studies of the Claremont project have involved attitudes and opinions of people in team teaching and those who have close knowledge of team operation but not direct participation. Comparative analyses have been conducted in school achievement. Attitudes of elementary and secondary students toward team teaching have been probed, and several other of the assumptions listed above have been or are presently being subjected to some sort of systematic scrutiny. Like other team teaching programs around the country, more substantial data will be forthcoming in a year or two—team teaching is still too young to provide the framework for any large quantity of data. Within these limitations, the following information gathered at Claremont over the past four years may be helpful:

With respect to the opinions and attitudes of people concerning the desirability of team teaching and its personal attractiveness to them, a three-year study involving about 7000 students, 450 teachers, 1200 parents, and 50 administrators is yielding useful information. Generally speaking, those who have participated directly in the program support the concept enthusiastically and

wish to continue their team teaching program. Teachers who have observed but not participated in team teaching are not at all sure they wish to get involved themselves. This tendency to wish to remain out of the program has been a constant factor over the extent of the study. Parents of children in teams and administrators of teams have shown the strongest desire to continue the program, followed by team teachers and then by team students.

The question is constantly raised whether a team teaching program can survive without outside financial assistance—as through a foundation grant. Whereas early in the Claremont project there was a strong feeling that the program could not continue without such assistance, there is now a feeling that the additional support needed for team operation can and should be provided at the local level. Since foundation support will cease in the field at the end of the current school year, this question will not be an academic one much longer.

When teachers who are participating in team teaching are asked what they consider the most important effects of team teaching on various key aspects of the school curriculum, their comments are consistently positive. The one area most considerably affected, however, has been the team teacher's own pleasure and satisfaction in teaching. The impact upon curriculum development, guidance functions, student motivation, etc., while positive, is not as important an effect in their minds.

TESTING THE TEAM TEACHING IDEA

When teachers were asked what factors they felt indispensable for an adequate test of the team teaching idea, a majority responded with: (1) time for teacher planning, (2) active administrative support, (3) agreement among team teachers on standards, (4) teachers with enthusiasm for team work, (5) the help of a team leader, (6) clerical assistance for team teachers. Those factors believed unimportant or undesirable in any test of the team teaching idea included: (1) students with above average ability, (2) time for conferences with individual students, (3) continuation of the same group of students for at least two years, (4) students with seriousness of purpose, (5) class size smaller

than average, (6) frequent meetings with parents, (7) students enrolled with team teachers for at least four of their classes.

Teacher members of teams had a variety of responses when asked which experiences they particularly liked. In this sample, at least 80 per cent appreciated being in an experimental program, working on common problems with team teachers, sharing responsibilities with team teachers for students' progress, using different methods of teaching in team classes, feeling rapport with members of the teaching team, having an opportunity to make significant contributions to education, being on a team rather than working alone, working closely with students who need help on personal problems, being challenged to do a better job in the classroom, learning to work together as a team, having new ideas to work on in the Teaching Team Program, exchanging ideas about classroom problems with team teachers, feeling zest for new ways of working, exchanging information about students with team members, planning with team teachers how to put new ideas into use, doing something different from regular teaching, trying out new ideas in the classroom, getting better acquainted with team teachers, having team students know the teacher better.

Results on all aspects of this opinion and attitude survey have been remarkably consistent over the past three years.

To date, four studies using standardized tests of achievement have been conducted at the high school level. Each of the studies compared a control group with the experimental (team) group. In every study, the differences between groups on total scores and sub-scores were not found to be statistically significant. At this date, therefore, we are concluding that, "to the extent the standardized tests measured the important aspects of achievement in the subjects comprising the teams involved, the teaching team produced no significant superiority in subject achievement over conventional classroom organization nor, more forcefully, any deficiency in subject matter achievement." It may reasonably be argued that standard tests measure a very limited range of desirable achievement. When one examines the types of curricular innovation introduced by the teams associated with the Claremont project, it becomes apparent that available standard tests provide an inadequate basis for judgment in those areas and that

new instruments capable of discriminating among such matters are needed.

The nature and significance of students' attitudes toward team teaching are currently being explored through depth interviews and the development of case studies. From these well-springs of information has come a wide range of responses—from delight with team teaching to utter boredom. The smallness of the sample and the range of responses precludes generalizing until more data are obtained. However, the nature of the responses at the uppermost levels has led to a re-examination of the kinds of team models most appropriate for that age.

In process is a study at the junior and senior high school level which seeks answers to the question, "Do team teachers know their students better than regular classroom teachers?" Preliminary analysis of the data fails to show that team teachers in the three schools included in the study have more knowledge of their students than teachers in typical school situations. Further analysis may yet yield differences worthy of notice.

These are merely representative samples of the type of research being conducted at one center for the study of team teaching. Other centers are producing information, at an increasing tempo, which will be useful in making judgments about the worth of team teaching for a particular school setting. It is important for us to realize that we do not yet have enough information to say yea or nay to team teaching with sufficient authority to make it stick.

But we can glean from the experiences of those who have participated in the Claremont project and in other teaching team programs around the country these guides for those who find the concept so intriguing they wish to start on their own:

- 1) Read what people have to say who have had experience with various kinds of team teaching programs. Talk with them personally if possible.

- 2) Select only those teachers for the team who really want to be on it. Then provide the additional indispensable elements for successful team operation: (a) time for teacher planning, (b) ac-

tive administrative support, (c) agreement among team teachers on standards, (d) the help of a team leader, (e) clerical assistance for team teachers.

3) Approach the whole idea of team teaching with an experimental attitude: be willing and able to judge the quality of what is happening within and to the team. Cultivate imaginative ways to solve old problems in curriculum, guidance, and all other aspects of the school's work.

4) Keep parents and others who have a stake in the experiment reasonably well informed.

5) Provide some formal means of evaluating the experiment. Employ creative approaches to evaluation; do not rely exclusively upon existing standard tests.

In other words, study the situation first. Approach team teaching with a plan and with an experimental frame of mind. Resource the idea adequately—do not cut important corners. Evaluate frequently, creatively, and as objectively as possible. Remember that parents tend to be more enthusiastic about team teaching than teachers. And finally, if these criteria cannot be met, it is probably better to leave experimentation in team teaching to others who are in a better position to give it a fair try.

Implementing and Evaluating Pupil-Team Learning Plans

Donald D. Durrell

Pupil-team learning consists of combining children into pairs, threes, or larger groups for mutual aid in learning. It utilizes the natural tendency of children to work together. This desire should be encouraged whenever it promises to increase the amount and quality of learning; it should be avoided when it seems to diminish either.

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Much school activity is based upon the theory that every lesson is a test of achievement, rather than a practice in learning. Each arithmetic paper, each written product, is marked by the teacher as though it were a terminal examination, rather than a single small step in the learning process. Pupil-team learning assumes that most school activity is practice toward achievement, and that mutual aid in this practice may be desirable. During learning practice, pupils may compare and correct answers, exchange ideas and evaluate approaches to problems, work together on plans or projects, and assist each other at points of difficulty. Sometimes they may present a team product rather than a collection of individual practice papers. Evaluation and analysis of the results of learning are, of course, based upon individual work.

The success of team learning depends upon the quality of the learning tasks in which it is employed. Good tasks are of a suitable level for the team, are clear and specific in requirements, and appeal to children as important. Every useful motivation should be employed to assure the learning disciplines satisfying to children. Allowing teams to progress as rapidly as they can master the material in arithmetic and spelling provides "knowledge of progress" motivation. Team use of study guides in social studies and science increases attention and emphasizes significant concepts, assuring the learner of mastery. Increased opportunity to respond to learning is provided when "taking turns" reciting is replaced with three-man-team responses to the same questions, with responses recorded by the team scribe. Team specialties in social studies, assigned six weeks in advance of the appearance of the topic in the course of study, produce displays which enrich the learning of all pupils. Remedial work, or intensive practice at points of common weakness, is suitable for learning teams, especially if self-directing, self-correcting learning "packages" are available.

The teacher is the key figure in the team-learning classroom. She sets the learning tasks and reacts to team products even though she does not mark them; she decides the make-up of most teams; she analyzes and evaluates the individual tests of achievement; she balances the day between team learning and whole-class activities; she plans the program of enrichment; she disciplines when non-working noise appears in a group, usually by

having pupils work alone at the team task. The quality of her direction, planning, and enthusiasm determines whether team learning is vigorous and disciplined, or whether it results in confusion and disorder.

Pupil-team learning requires no change in school organization; it may be adapted to self-contained classrooms, to ability grouping by subjects, to departmental teaching, to television or other programs of mass presentation, or to teacher-team programs. Its most extensive use to date has been in self-contained classrooms, to which it brings many of the advantages of the ungraded elementary school, yet maintains the single teacher responsible for most of the instruction.

The major project to date in use and evaluation of pupil-team learning was in Dedham, Massachusetts, during the academic year 1958-59. A U.S. Office of Education contract enabled the study to be made in forty-seven self-contained intermediate-grade classrooms in eight elementary schools. The problems and techniques in the conduct of the Dedham program may be useful in setting up and evaluating similar ventures.¹

Accepted protocol for initiating new educational ventures calls for enlisting the interest of teachers who then make the decision on acceptance. Another desirable method is that of starting new ventures in selected schools or classrooms, then spreading the practices as they appear to be valuable. Neither of these was used in Dedham. The superintendent had been a member of a university laboratory in elementary school supervision, in which the group of supervisors initiated differentiated instructional practices in classrooms of cooperating schools. During this experience it became apparent that a vigorous approach to pupil-team learning in an entire school system would be desirable. The decision to try the program for a year was made by the superintendent with the unanimous support of the school committee.

The critical period for any such educational venture is between the decision to make the change and the time of its in-

¹ A more complete description of techniques and outcomes of the Dedham study is found in the following: Durrell, Donald D., Scribner, Harvey B. and others. "Adapting Instruction to the Learning Needs of Children in Intermediate Grades." *Journal of Education*, Vol. 142 (December, 1959), pp. 1-78.

ception in the classrooms. In Dedham, the announcement of the decision was followed immediately by demonstrations of pupil-team learning conducted by the research fellows who were to assist in the program. The advantages and possibilities of pupil-team learning in providing for individual differences was presented. Since this was done in May, with a summer to elapse before the start of the program in September, there was an interval in which teacher doubts and fears might grow. This is illustrated by a story told by one of the teachers after the program was successfully underway: "The proposal seemed to upset my own ideas about effective teaching. Since I had reached minimum retirement age, I decided to resign rather than to subject myself to the change. Then I had a better idea—I would start the program, then resign in protest."

A fall workshop was conducted by the research fellows, with all teachers and principals participating. This was concerned mainly with pupil-team progress methods in arithmetic and spelling. These subjects were chosen to begin the program for a number of reasons: they had always worked well in previous trials of team learning, pleasing both pupils and teachers; they could be started on the first day of school, using job sheets to accompany the arithmetic books;² they required less work of the teacher than conventional methods of teaching these subjects. The research fellows offered to help any teacher start the program in her classroom if she were uncertain how to begin, but most teachers preferred to introduce the program to their pupils.

The research fellows were in classrooms every day during the school year, assisting teachers with problems and making adjustments to the varying needs that appeared. Since both research fellows had been superior elementary school teachers and had experience in supervision, their suggestions were readily accepted. After team-progress methods in arithmetic and spelling were running smoothly, team-learning procedures were introduced in other subjects. The great shortage was that of self-directing, self-correcting materials, desirable for disciplined team learning. Groups of teachers met with the research fellows to prepare study guides, to find ways of adapting materials to various

² McHugh, Walter J. and Manning, John C., *Arithmetic Job Sheets to accompany Growth in Arithmetic*. New York: World Book Company, 1961.

levels, to develop exercises for remedial instruction, to provide challenging learning experiences for superior pupils. The production of materials was shared by teachers; materials were exchanged to avoid duplication of effort. Successful new practices were spread by the research fellows, and there were constant demonstrations of promising approaches.^{3,4}

The major evaluation of the program was made by comparing the achievements of pupils under the same teachers prior to and following the experimental year. Metropolitan Achievement Tests were used for general achievement comparisons. Although such tests are limited to a few facets of educational growth and depend largely upon retention of facts and skills, they provide a basis for comparison. Average achievements in the team-learning year improved six months over the control year in grade six, and four months in grade five, but there was no significant improvement in grade four except in spelling. Data were analyzed for subject achievement of pupils of different levels of intelligence, for boys and girls.

Changes in affective reactions of pupils, teachers, and parents were discovered by the use of various scales. Attitudes of pupils toward school subjects showed a statistically significant improvement in grade five; grades four and six did not change significantly. Social distance scales used by pupils revealed no significant changes, nor were any changes found in teacher ratings of classroom behavior of pupils. Teacher attitudes toward various aspects of the program were obtained by anonymous reactions to a questionnaire; they felt that the programs in spelling, arithmetic, and reading were "superior," but they rated social studies and language arts instruction as "good." Parent reactions toward the program, obtained by anonymous returns, were definitely favorable, with 95% reporting "very pleased" or "satisfied."

Perhaps the most novel feature of the evaluation program was that of a "Subject Service Analysis" based upon a standard interview with each teacher. Evaluation was made of the follow-

³McHugh, Walter J. "Team Learning in Skills Subjects in Intermediate Grades." *Journal of Education*, Vol. 142 (December, 1959), pp. 22-52.

⁴Manning, John C. "Differentiating Instruction in the Content Subjects in Intermediate Grades." *Journal of Education*, Vol. 142 (December, 1959), pp. 52-66.

ing adjustments to pupil needs in each subject; provision for levels of ability, provision for learning rates, special instruction for varying skills needs, self-direction and social learning, and enrichment of instruction. Each item was rated on a four-point scale, varying from routine uniform instruction, rated as "1," to major provision for the service needed, rated as "4." The analysis had undergone several revisions and was administered by outside experienced supervisors who were especially trained in evaluating differentiated instruction. The reliability of the scale is .90, based upon separate ratings of fifty teachers.⁵

The purpose of the use of this scale was to determine the amount of actual change in instructional services to pupils. The degree to which any program achieves its intended services varies; some programs are found only on paper, but not in classrooms. The maximum possible rating on the scale was 92, the minimum, 24. The average rating of teacher service to pupils during the control year was 29.6; in the experimental year it was 63.5, a marked improvement, but still short of the maximum possible rating. Improvement in teaching the separate subjects was rated from most to least, as follows: reading, spelling, arithmetic, social studies, language arts.

All sorts of frustrations beset the experimenter who attempts to evaluate changes in a total educational program. The experimental program contains so many variables that it is impossible to ascribe the change in achievement to a single variable. The gains in arithmetic may have resulted less from pupil-team learning than from the provision to allow pupils to progress beyond the grade; one-third of the pupils completed two-years' work during the year. The use of study guides, the improved quality of discussion questions, the wide employment of pupil specialties, and the marked increase in public library circulation among these pupils are important to the gains shown. Some of the experimental factors may have been detrimental to learning but were more than offset by improvement resulting from other factors. And there is always the fact that the measures employed

⁵ Scribner, Harvey B. *A Scale to Rate Teaching Services in Grades Four, Five, and Six*. Ed. D. Thesis, Boston University, 1960. Microfilm copies may be obtained from University Microfilms, Ann Arbor, Michigan.

failed to include many of the accomplishments which were presumed to be taught.

Although the teachers were the same both years, the intelligence and initial achievements of pupils were the same, and the textbooks and school organization were unchanged, there were other variables which may have influenced the energy of the teachers and the achievements of the pupils. Any new program is stimulating, especially when it receives wide public notice and attracts constant visitors. The daily contact with the research fellows, and the increased classroom supervision by the principals must also be considered. All that can be said with assurance is that the program was effective in increasing achievement in grades five and six. The evaluation of pupil-team learning as a specific factor requires much more carefully controlled studies and several of these are under way.

One of the tests of an experimental program is its continuance in the schools where it was employed. The pupil-team learning program has continued in Dedham in the two years following the study. Many of the techniques have spread to primary grades and to junior high school classes. The assurance of achievement under pupil-team learning has led to a "departmental day," with Wednesdays being devoted to extra instruction in music, art, dramatics, science, languages, and other areas in which teachers have special competence.

The demand for assistance in starting pupil-team programs in other school systems has been met by an area-centered "laboratory in team learning," offered each semester in different locations. Enrollment is limited to principal-teacher teams; no teacher may enter unless her principal is also enrolled. Demonstrations are given with full elementary classrooms in which pupils are unfamiliar with pupil-team activities. These demonstrations are followed by discussion of promising variations in methods and by exhibits of materials. A new school subject is demonstrated every two weeks. After each subject is introduced, teachers are required to use some form of differentiated instruction in that subject for the duration of the course. They report on success, variations, and problems; they prepare lessons cooperatively and exchange instructional materials. Principals are expected to go into classrooms of teachers not in the course to demonstrate pupil-team

learning procedures. More than two hundred members of principal-teacher teams have attended the laboratory during the past two years. They have included teams from teacher-team schools, from ability grouped schools, and from schools with self-contained classrooms.

PART V

Dual Progress and Multiage or Multigrade Grouping Plans

THE DUAL PROGRESS PLAN has received much attention both in the educational journals and in the popular literature. A historical resemblance to dual progress is found in Carleton Washburne's noble attempt to create a grouping plan and curriculum in Winnetka that would embrace the principles of the newer science of behavior. More specifically, the platoon grouping of the early 1900s, predating the Winnetka plan by thirty years, replete with its attempt to deal with one group in the "fundamentals" and the other in "special activities," seems to exhibit the rudiments that are germane to present-day dual progress.

The dual progress organization divides the curriculum into two basic areas making an assumption that these are pandemic for children. The language arts and social studies are considered the "cultural imperatives." They are taught as a core program within the traditional graded structure. Advancement from grade to grade depends upon the mastery of the subject matter in those areas along with some consideration of social maturity. Ability grouping is used in forming the classes at each grade level. The other half of the school day consists of instruction in the "cultural electives." Mathematics, science, art, and music are taught to ability groups in a nongraded program.¹ Advance-

¹ The nongraded aspects of the dual progress organization are not analogous to those described and evaluated in Part IV of this collection. The "imperatives" and "electives" are offered in a very typical graded fashion, which is in counterdistinction to the concept of nongrading and the desire to eliminate from the educational vocabulary the term *grade*.

ment in these areas is based on personal ability and interest. The grouping in this part of the program does not consider the child in relation to his placement in the core program. Each teacher is a specialist in his area and does not teach any other subject.

Since the dual progress plan is associated with the Experimental Teaching Center, School of Education, New York University, most of the materials relating to it have either come from there or from those who are in the public schools but who are associated in the program with the Center. Before moving on to the other grouping programs which will be discussed in this section, it would be of value to list the advantages and disadvantages of the dual progress plan.

The advantages claimed are that:

- Teachers are instructing only one subject in which they are interested and well prepared and this should result in a higher level of instruction.
- A specialist teaching in any subject would contribute greatly to individualization.
- The lock-step is broken in the nongraded areas and able pupils may advance farther than they would in the traditional graded program.
- Individual differences are provided for in that a student may work at different levels in the different subjects.
- There is a consistent amount of instruction in each area and not dependent on teacher preference.
- The core class provides continuity and a feeling of belonging to a permanent group, which is considered desirable for elementary school children.
- Many pupils in the test schools said that school was less boring with the changes in classes and teachers.
- Many educators consider it desirable for children to be well acquainted with several teachers to obtain the benefit of their different methods and personalities.
- The idea of specializing in one area may attract more able people (and more men) to the elementary education field.

The disadvantages claimed are that:

- No one teacher knows the child well; parents must consult with several teachers to learn of progress.

- Individualization of instruction cannot be achieved very well when a teacher is meeting perhaps 150 children a day in relatively short periods.

- The complex planning and scheduling necessary may well reduce the out-of-class activities, such as field trips.

- It would be difficult to provide continuity between the different subject areas being taught by specialists.

- During half the day, children are moving about every forty minutes and if an interesting problem comes up, it must be dropped if it is time for the class to move on.

- In the test schools, children complained about noise and pushing during class changes, lack of a private desk, and the tendency of teachers to pile on homework.

- Some educators feel that cross-grade grouping makes the older child in such a group feel inferior and a younger child feel insecure.

- It is difficult to develop a nongraded level sequence of material in math and science with appropriate tests.

- In the beginning at least, it is difficult to find the necessary teacher-specialists, or to make specialists of present teacher-generalists.

- Some children will still "flunk," since it is emphasized that mastery of grade-level requirements is necessary for promotion in the graded part of the program.

Multigrade and multiage grouping envisages two or three of what are normally traditional grades combined in one classroom. The children in this multiage or multigrade classroom are taught as an ordinary classroom group but employing grouping by ability for all skill subjects. It is not a combination of old-slow learners with young-fast learners. By avoiding the placement of very fast and very slow in the same classroom, the range of ability in each classroom will be no greater than that found in a single grade classroom. Frequently it is less.

Multigrading or multiage grouping is not used simply as an administrative device for controlling class size as combination or split grades have been used. It is a positive organizational plan for the improvement of learning. Some of the advantages

and disadvantages listed below may make clearer the differentiation between this plan and combination grades.

The advantages claimed are that:

- If there are multigrades throughout the elementary school, a slow child may spend an extra year without actually repeating. (For example, one year each in grade 2-3, grade 3-4, grade 4-5, and grade 5, thus spending four years for the 3d through 5th grades. Also, a fast child may gain a year without skipping. For example, one year each in grade 4-5 and in grade 5-6, thus spending two years for grades 4th through 6th.)

- The plan helps parents to understand that each child has a wide range of abilities and does not achieve at the same grade level in all subjects.

- More concern for individual differences is apparent because there is a de-emphasis on rigid class lines and this reinforces teaching on the level of the child's ability.

- The wide range of experience, capacity, and interest brings greater enrichment to the classroom program.

- Children have the experience of being a younger, middle, and older member of the group at different times instead of being in the same relative age position throughout their elementary school experience.

- Rivalry may, to some extent, be minimized and replaced by friendly acceptance of difference when the grade level loses significance.

- Stimulates the teacher and gets her away from grade-level teaching.

- Teacher load may be equalized thus preventing a situation where one grade may have twenty in each room while the next grade up or down has thirty-five in each room.

- The groups more nearly resemble groups outside school.

- Multigrading may be used as a transition stage from graded to nongraded organization.

The disadvantages claimed are that:

- An extensive public information program must be undertaken to ally such misconceptions as: (a) the upper grade children in the combination class are slow learners; (b) the chronological

age range is two years instead of one so that the range of abilities is greater in the combination classroom; (c) the teacher must teach two grades so the children are getting only half as much teacher time as formerly.

- Teachers must be adaptable enough to move away from teaching the subject matter of one grade and into the area of providing extensively for individual differences.

- The social studies program must be planned so that no child will repeat units.

- It seems awkward and confusing to continue the use of grade labels when they are not serving their traditional purpose of separating children into classes.

Dual progress and multiage or multigrade grouping plans have been carefully watched and evaluated. Stoddard's article describes the beginnings of the dual progress plan. He discusses the sets of hypothetical constructs under which the original experiment was set up.

Heathers gives some of the preliminary indications of what was found after two years (the final evaluation is due in 1964-1965). His present and erstwhile colleagues (Fleming, Hurley, Keliher, and Manolakes) in their reactions call for a closer look at dual progress and are condemnatory of several aspects of the plan. Unhappily, as they call for "real" research, they base their criticism on the myth of "what was in the past must somehow or other have been good." Their desire to look at a past "back-log of experience" as a base for research seems a little unreal in this day of scientific investigation. Bishop and Trachtman give two aspects of implementation vis à vis the dual progress plan. Their insights help to establish guidelines and valuable considerations that are necessary precursors to action within a school system.

Bahner's discussion of combination grades and team teaching and the variations thereof, with the attendant observation that teachers now see clearly the variations in learning, adds more individuals to the growing list of those who see so many opportunities available when the self-contained classroom is eliminated. Hamilton, Rehwoldt, and Carlson, who were all together in the multiage-multigrade experimentation program are con-

vinced from their findings that differences rather than similarities should underpin grouping. Carlson's six factors attendant to this kind of grouping seem sensible and should be compared to the other concepts offered in this section; especially in relation to Heathers and Fleming, *et al.*, and aspects of criticism concerning various types of grouping.

The Dual Progress Plan

George D. Stoddard

On July 7, the Ford Foundation announced a three-year grant of \$350,000 to New York University and the co-operating school systems of Long Beach, N.Y., and Ossining in support of a study-demonstration. It is the outcome of a year-long study by a working party financed by the Fund for the Advancement of Education. These funds also will inaugurate the Experimental Teaching Center of the School of Education as recommended in the Self-Study of New York University. The center will be the school's chief research focus for studies and experiments in teaching methods and teacher education.

The first project of the center will be an intensive study and demonstration of a new plan of instruction in the elementary grades. Perhaps the best way to visualize this *dual progress plan* is to compare it to the standard plan of instruction in the elementary grades—the self-contained classroom. In the latter plan, which, for comparison, can be labeled the *unitary grade plan*, the pupil generally receives instruction in all subjects except physical education in the same classroom. The grade is an all-day unitary environment; a pupil's progress is made essentially under the teaching and guidance of one teacher. Specialized teachers, as in music and art, may come into the classroom at designated times to offer their subjects, or the class as a whole may be trans-

ferred to another room under a special teacher. This is the pattern familiar to millions of American pupils today.

The dual progress plan calls for a substantial departure from the common approach, and the differences in practice are grounded in theory:

[A home-room teacher] would be responsible for registration and counseling; she would teach reading and the social studies. The other half day would be assigned to special teachers who would teach mathematics and science, music, arts and crafts, recreation and health, and, beginning with grade five, an optional sequence in a foreign language. The special teachers in each subject or cluster of subjects would offer the work on a longitudinal basis straight through the elementary grades, and in a combined school, throughout the twelve grades. Thus the special teachers, as a team, would be in a good position to judge the quality of special aptitudes and their course of growth throughout the child's school life. Test scores, profiles, ratings, and sample items would furnish a continuous comprehensive record. All special teachers would encourage pupils to form social clubs that would cut across the grades and be based on content interest.

Generally a pupil's grade standing, which is an all-round maturity concept, would be determined by his home teacher, but he would be free to pursue avidly a speciality according to his aptitude. Thus, a fifth-grade pupil might play in the high school band or orchestra, and a pupil gifted in mathematics or science would be brigaded with like-minded students in more advanced grades.¹

In short, the dual progress plan is designed to put an end to the concept of average pupils doing average work under average teaching conditions. In the culture-determined language arts and social studies, all children are confronted with standards they must strive to meet. In specialized subjects, we can afford to reduce the nagging of the dull in order to concentrate upon the performances of the above-average and gifted. This is the natural choice of adults once they are free from the school's demands. Everybody talks, reads, writes, and decides; everybody listens, watches, and appreciates. Comparatively few—teachers, professionals, or zestful amateurs—perform. This cultural duality is everywhere apparent.

¹ G. D. Stoddard, in C. W. Hunnicutt, ed., "Education 2000 A.D." (Syracuse: Syracuse University Press, 1956), p. 149.

The study demonstration to go into effect in the fall of 1958 will divide the pupil's day into two parts: the graded and the nongraded segments of instruction.

The graded segment, occupying about one-half the school day (morning or afternoon), includes instruction in the social studies and the language arts, conducted in the same room by the home-room or "core" teacher. These two related subjects comprise the totality of the grade concept; they represent the demand of the culture pattern in the sense that every pupil is expected to show mastery of them commensurate with his talents. No child can really elect to dismiss reading, writing, speech, and the social studies as being of small consequence to his all-round growth and maturity. In fact, if a child is incapable of making some progress along such lines, we tend to regard him as mentally defective. This, of course, is not true for performance in music or the graphic arts; it is scarcely true for mathematics and science beyond their use as tool subjects or in descriptive ways. Reading comprehension so saturates our tests of intelligence that other aptitudes scarcely count.

In the nongraded segment, different specialist teachers will offer the instruction in different rooms, with different classmates. Where possible, teaching teams will carry the pupil from grade three up through the elementary levels and perhaps through junior high-school instruction. An important consideration is that mathematics and science will be added to physical education and the creative arts as proper subjects for the specialist teachers. Assignment to a particular specialized class and teacher will depend not on the pupil's age or grade, but on his special aptitudes, interests, and achievements. He can go fast or slow, without losing his status as, let us say, a "fifth-grader."

All the Long Beach and Ossining school children in grades 3-6, inclusive, will be included in the new plan. Over 100 teachers and about 2,700 pupils are involved. Practically, the schedules indicate a half day for language, social studies, and physical education, followed (or preceded) by a 40-minute period daily in science, 40 minutes in mathematics, and 40 minutes on alternate days for arts-and-crafts and music.

New curricular and test materials will be devised and various teaching units will be tried out. The study will be run co-

operatively by the Experimental Teaching Center and the two school systems. The writer is in general charge of the study. The director of the center is Glen Heathers. David G. Salten of Long Beach and Charles M. Northrup of Ossining, the superintendents of schools, with their aids, Gilbert Trachtman and David W. Bishop, are directing the new programs in their respective school systems.

After a trial run, other school systems may be invited to join as affiliates in a wide testing and demonstration of the dual progress plan. Also, as pupils move up to the junior high-school levels, it is proposed to make special reports of their progress and to assess the implications of the plan for high-school reorganization. In any event, this three-year study will be given over to a thorough evaluation of the pluses and minuses of the plan, together with a co-ordinate inquiry into the implications for teacher education.

Dual Progress Plan

Glen Heathers

Responsible educators continuously seek new ways to improve the quality of our schools. In the elementary school, many efforts in recent years have been intended to strengthen the self-contained classroom. The proponents of that plan believe it provides the essential framework for educating the "whole child"—one general elementary teacher who teaches almost all areas of the grade-level curriculum to one grade-level class, mainly in one general-purpose classroom.

"Strengthening" the self-contained classroom has meant modifying each of its basic features in the direction of specialization. Specialist consultants or specialist teachers have been em-

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ployed to help, or to replace, the general elementary teacher in physical education, music, arts and crafts, remedial reading and speech, library, and foreign language. Special purpose rooms have been provided for several curricular areas. Special groups of students have been formed, most often to meet the needs of gifted students and slow learners. Special curricular offerings have been introduced to "enrich" the basic grade-level course of study.

The self-contained classroom, as employed today, is a patchwork. A good question is whether another plan could provide better for developing the young child's intellectual potentialities and his personality, and could offer a more satisfying professional role to the elementary teacher. One educator who thinks so is George D. Stoddard, Chancellor of New York University. He has challenged the self-contained classroom concept by offering the semi-departmentalized "dual progress plan." Currently, under grants from the Ford Foundation, this plan is being demonstrated and tested in grades 3-6 of the elementary schools, and in grades 7 and 8 of the junior high schools, at Long Beach and Ossining in New York. The Experimental Teaching Center at New York University is helping the school systems implement the plan, and is responsible for evaluating it.

In the dual progress plan, all teachers are full-time specialists in one of six curricular areas—language arts-social studies, mathematics, science, physical education, arts and crafts, and music. This feature of the plan is intended to insure that every student, every year, receives instruction in each of these six curricular areas from a teacher who knows the area well, likes to teach it, and knows how to teach it to young children.

Very few general elementary teachers can meet these requirements. This fact has been recognized by many school systems that now employ elementary specialist teachers of physical education, music, arts and crafts, and remedial reading and speech. The dual progress plan assumes that special competencies are also necessary for teaching the "basic" curricular areas—language arts, social studies, mathematics, and science. Obviously, elementary specialist teachers must not be narrow subject-matter specialists; they must understand young children, and know how to teach them, as well as know their special subjects.

The dual progress plan bears its name because, within it, students progress in language arts, social studies, and physical education according to the usual grade system, while they progress in science, mathematics, and the arts on a nongrade-level basis. In the plan, a student spends one half of the school day (morning or afternoon) in an ability-grouped class of his grade mates, studying language arts—social studies with a “core” specialist teacher, and physical education with a specialist in that area. During the other half day, he attends different cross-graded, ability-grouped classes in mathematics, science, arts and crafts, and music under different specialist teachers.

The theoretical justification for “dual progress” is the distinction between “cultural imperatives” (language arts and social studies), which everyone in our society is expected to master well enough to have a basis for effective social living, and “cultural electives” (science, mathematics, and the arts) in which level of achievement is expected to depend greatly on the individual’s abilities and interests. Grade-level placement, the grade-level course of study, and grade-to-grade promotion are considered appropriate for the former but not for the latter. Instead, non-graded grouping and advancement are employed to permit the gifted student in mathematics, science, or one of the arts to advance without grade-level restrictions as fast and as far as his abilities permit, while freeing the slow learner from the unnecessary requirement that he “keep up to grade level.” In the plan, slow and average learners spend as much time studying the cultural electives as do gifted students; it is the rate of progress that differs.

INDIVIDUALIZED LEARNING

A feature of the dual progress plan is that it provides for all students, the slow, the average, and the gifted, the sort of individualized learning programs that many school systems offer to gifted students only.

The present study allows five years (1958–63) for placing the plan in operation and measuring its effects. All this time is needed, since it takes years for a school to install a semi-departmentalized plan. Most time-consuming is the re-education of teachers whose training and experience were as general elemen-

tary teachers. Despite an intensive in-service program during the first two years of the study, the teachers still have much to learn before they become expert and confident as specialist teachers of their chosen curricular areas.

The research evaluation of the dual progress plan employs a pre-test—post-test design, rather than one providing a simultaneous comparison of experimental (dual progress plan) and control (self-contained classroom) treatments. The design being employed is appropriate for a preliminary test of the plan. A controlled study might be undertaken later. Such a study, to provide adequate controls, would require a large number of school systems under each of the two plans—at least as many as were included in the Eight-Year Study.

What do the data obtained during the first two years of the study indicate about the strengths and weaknesses of the dual progress plan? Students' achievements, as measured by standardized tests, showed no definite gains or losses under the plan, except that the ablest students appeared to benefit from nongraded advancement in mathematics and science. Data from a personality inventory given to all students in the plan revealed no effects of the plan on the frequency of emotional and social problems that children report. An intensive observational study of children's adjustment in the plan is under way. This study should resolve some of the conflicting opinions of principals and teachers as to whether the dual progress plan has increased or decreased the frequency of children's emotional and conduct problems.

A considerable majority of students in each of grades 3–6, of all ability levels, reported that they liked the dual progress plan. They enjoyed changing classes and having different specialist teachers. Some students complained about the lack of a private desk, about carrying books from class to class, and about conflicting requirements made by different teachers.

The great majority of parents who replied to a questionnaire about the effects of the plan on their children favored the dual progress plan. They felt their children were enjoying school more and learning more than they did before the plan was introduced. These findings should be interpreted with caution since only about one-third of the questionnaires mailed to parents were returned.

Teachers in the plan, thus far, are nearly equally divided into

those who prefer to teach in the plan, and those who would prefer to teach in the self-contained classroom. A greater number of teachers favored the plan at the end of the second year of the study than at the end of the first year. A considerable majority of the teachers expressed themselves as in favor of specialist teaching, ability grouping, and nongraded grouping and advancement.

Teachers' objections to the plan centered about problems of getting to know the children well, difficulties in teaching low-ability groups, and concerns about whether emotional and conduct problems could be dealt with effectively within the plan. Also, a good many teachers, particularly during the first year of the study, found the transition from the work of general elementary teacher to that of specialist teacher very demanding of their time and energy.

The results reported here should be viewed simply as preliminary indications obtained during the first two years of a five-year study.

The Long Beach and Ossining school systems are performing a notable service to American education by participating in the test of the dual progress plan. It is proper that educators are following the study with interest and forming opinions about the dual progress plan, while reserving their final judgment of the plan until the present study has been completed.

Reactions to the Dual Progress Plan

*Robert S. Fleming, Beatrice Hurley, Alice V. Keliher,
and George Manolakes*

One of our most cherished dreams for children is to realize our quest for quality education. It is encouraging that many efforts designed to improve the elementary school are under

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way. However, we do our profession serious harm when we initiate new programs without concern for basic values and when we accept them with limited or no evidence of their merit. The history of elementary education is not static. There have been changes. Its values are well established and there are many strengths in the elementary school of the mid-century. Leaders in elementary education have been alert to receive and act on suggestions, advice and help.

There are those, however, who tend to accept any innovation as being "good." They do not examine the new in terms of its expressed purposes and specific consequences. One should not pass judgment on a given new program without examining the assumptions which underlie it nor without having a clear-cut statement of the purposes to be achieved.

Some innovations in education are urged by persons outside the profession, often innocent of knowledge of what has been found best for children. To be sure the professional educator in the elementary field does not have a monopoly on ideas for improvement. However, those working closely with children and their teachers should be central in shaping basic changes. It would seem that teachers, principals and others working closely with elementary schools should be the best prepared persons to chart the course for improvement. Teachers and elementary school specialists did not actively participate in the initial design of the Dual Progress Plan. The plan was financed by The Fund for the Advancement of Education and is presently being demonstrated in two public school systems in New York State—the Ossining and the Long Beach systems.

PURPOSES DIFFER

The Dual Progress Plan places emphasis upon a departmentalized system, graded in certain areas and nongraded in other subject areas. Teachers concentrate on their subject speciality. Children as young as eight have six different teachers in a day. No one teacher sees them through the whole day to integrate the diverse subject offerings. Hence, no one teacher knows the child well. Parents must consult with a number of teachers to learn about their child's progress.

Most modern educators would agree that the primary goal of the elementary school is to create an environment favorable to the discovery, promotion and nurture of the unique potentials of each individual child. In addition, careful provision for wholesome group living is cherished. Such an environment has certain distinguishable characteristics including the following:

- Develops close, friendly relationships between children and the teachers.
- Builds regard for the role of purpose in living and learning to the end that children engage in quality experiences.
- Provides opportunities for children to plan, discuss, arbitrate, disagree, solve problems, think, evaluate, value.
- Recognizes the need for knowledge.
- Recognizes that continuity of living and learning is essential and makes flexibility of work necessary.
- Promotes a maximum of challenge for the development of interests.
- Permits teachers to observe a child's value system over a long period of time.
- Fosters creative growth of each child.

Quite different assumptions undergird the development of the Dual Progress Plan and similar plans for organizing the elementary school:

1) There is an assumption of diagnostic precision, and a faith in the validity and reliability of achievement tests. This assumption must operate when the organization of learning groups is by subject areas. There must be an acceptance of some quality of sameness or homogeneity that is expressed in a similar test score. There is an assumption that all children having an achievement of 4.7 in science are at the same starting point. Moreover, when these data are combined with other tests, there is an assumption that the child's ability to advance further in this area can be predicted along some prearranged sequence of science understandings and knowledges.

2) There is an assumption, in use of the term "nongraded advancement," that the learnings, toward which this plan is directed, progress in an orderly and sequential manner. There are

levels of "easy mathematical concepts" that can be identified, taught and used as steppingstones to more advanced types of learnings.

3) There is an assumption that the growth and development of children can be best provided for in a curriculum that is presented by a series of teachers whose orientation and training are focused upon the subject for which they are responsible. Previous plans requiring many separate subject experiences have necessarily almost eliminated from the school program rich experiences for children, such as trips, dramatics, and three dimensional art.

4) There is an assumption that the specialist teacher, through concentration on specialized knowledge, can bring about maximum all-round growth in children.

PROBLEMS IN IMPLEMENTATION

The implementation of many of the departmentalized type of programs such as the Dual Progress Plan creates a host of the same problems that led to the abandonment of similar proposals in past years. Obviously this plan is better designed for large elementary school units which provide multiple sections of the same grade in order to permit the intricate groups to be structured. Further, although the arrangement was not part of the original Dual Progress Plan, it was not accidental or unexpected that both school systems in which the plan is being carried out adopted homogeneous grouping for their elementary grades.

Several curricular problems are suggested by the implementation of the Dual Progress Plan. These are:

1) In order to get children to the special teachers and special rooms for instruction, half the children are moving somewhere every 40 minutes or so. This prevents continuity in learning activity. It also creates traffic problems, confusion and consequent disciplinary rigidity that must accompany the movement of large numbers of young children.

2) The lesson already learned in many communities is that improvement of instruction and learning cannot be gained through mechanical redistribution of teachers and children. This

is especially true when such plans attempt to oversimplify the activity of teaching by assigning to it a more restricted subject centered role.

3) One of the features of the Dual Progress Plan is its claim for individualizing instruction. However, the evidence on compartmentalizing learning into subject areas seems to indicate that this purpose cannot be achieved by such a plan. Consider the plight of the special teacher of mathematics who meets a succession of groups of children for 40 minutes each. During the day he may meet over 150 children. Individualization of instruction cannot be achieved when time and numbers of children in combination with static teaching materials, curriculum guides, and a subject centered program provide the dominating structure.

4) The separateness of the subjects under the direction of specialist teachers introduces instructional problems requiring a high level of communication and coordination among the teachers. It is difficult to provide time for essential team planning. This has been the perennial problem of secondary school teachers. Without coordination of effort, the needs of children are met sporadically and in isolation. The school day becomes a series of subjects taught in separate compartments, thus forfeiting the learnings that grow out of the integration of language arts with science, or music with social studies, and the many combinations of activities which give substance and meaning to the school experiences of children. In a more wholesome plan the classroom teacher values the expertness of the specialist when he is functioning as a co-teacher and consultant while the classroom teacher ties together the children's learnings.

5) The complex planning and scheduling of classes with limited time must ultimately lead to the reduction of the number of intensive out-of-class activities that children experience under a more flexible time schedule. The problems of scheduling field trips that lead to many kinds of quantitative, language, and creative experiences increase with the numbers of teachers and class groups that are involved. A logical result is the reduction of enriching experiences for children, and a greater adherence to the preplanned curriculum.

6) The current emphasis on the special areas of science and mathematics as well as the revering of the specialist, result in

an alleged higher status for the specialist teacher than for the "core teacher" who has assumed the functions of the generalist. This tends to create problems of staff morale. Also such emphasis on these subjects places in a minor role curriculum areas such as language arts that have been defined as the "cultural imperatives," while the "cultural electives," science and mathematics, become, at least in a surface way, more prized and valued.

EVALUATION IS NEEDED

It is unfortunate that the Dual Progress Plan was not conceived as an hypothesis to be tested rather than as a demonstration. The fact that it is a demonstration with no control groups, indicates acceptance without genuine research. In terms of research design, some appropriate plan of matched groups could have been built in to enable the investigators to compare the experimental (DPP) with other teaching plans. This comparison would have made possible some mature basis for acceptance or rejection of the hypothesis.

Then, too, often the pressure of inaugurating a "new" plan with much publicity, many visitors, and continuous testing yields "improvements." This is often temporary and illusory. Had it been possible to give equal attention, support and help to a more developmental elementary program and to build appropriate evaluation techniques for both the Dual Progress Plan and the comparison program, a sound study would have been possible.

As it now stands, emphasis in the Dual Progress Plan is on academic learning. There is extensive use of achievement tests. These tests are to provide a comparison of pre-test and post-test data. Such procedures often freeze the curriculum and teachers tend to teach for the test. Also, these procedures limit evaluation to achievement testing rather than employ a more comprehensive plan in which a variety of evaluative procedures (formal and informal) are used. The emphasis on achievement testing fails to make use of unlimited informal classroom techniques which supply important data on attitudes, interests, creativity, work habits, values and concepts. Useful among these techniques are observations, self-inventories, children's work, exhibits and conferences. Furthermore, use of these personal ways of evaluation

lead the teachers to look more closely at the individual child rather than his individual normative achievement score. One of the persistent needs of *all* elementary education is to develop diversity in evaluation techniques. Evaluation can be a means of extending learning.

Today's secondary schools are struggling with their problems created by over-departmentalization and subject-centeredness. It is a shame to impose the old organizational pattern of secondary education upon the elementary school.

Those who have worked in a devoted manner in the past for curriculum improvement in the elementary school look to the vast backlog of experience, past and present, and to research to chart future directions. Dedication to a conception of elementary education grounded in the philosophic principles of total development enables teachers to create a sound learning environment. Leaders need to communicate with teachers, parents and children to formulate hypotheses for significant continued research. Cooperative, continuous evaluation practices are essential if next steps for improvement are to be valid.

Many elementary educators would gladly participate in a study of the Plan based on genuine comparative research.

The Role of the Local Administrator in Reorganizing Elementary Schools to Test a Semi-departmentalized Plan

David W. Bishop

Henry Steele Commager, in a speech at the University of Maine in the summer of 1960, expressed his conviction that the strength of this nation was derived from its drive for change, its willingness to undertake the new and different, and its lack of fear of the unknown. Change is vital and vitalizing. This is no less

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true in education than in any other facet of our national endeavor. There is today, possibly more than at any other time, a climate of change in education; a climate built of charge and countercharge, examination and re-examination, assessment and reassessment, and expansion and retrenchment. The search and struggle for improvement, and the seeking of education's "new frontier" engender a greater excitement in the professional than he has ever known.

Despite contradictions in the niceties of the philosophies expounded by submariners, historians, editors, writers, and educators, there is general agreement among us all that the education of our children must be balanced in its attention to mental, emotional, social, physical, and moral and spiritual needs. It is, has been, and will be, impossible for the school to nurture the academic while starving the social, to build the physical while destroying the emotional, or, indeed, to favor any to the total exclusion of all else. The countless changes and innovations in teaching technology, methodology, and approach serve to better do those things we all desire.

So, too, does organizational change. Organization serves. It has no other function. It serves to bring students and teachers together in a way which will provide balance without denying the fullest realization of educational aims, individual freedom under social law, and that impact of one individual on another which is the very core of teaching. It serves to provide optimal opportunity for the full utilization of individual teaching talents and individual student potential. Organization serves the teacher that he may better serve the child.

The school administrator today is in a happy situation. The public he serves is ready for change, expects it. While more knowing in educational matters and more interested than has been generally true in the past, the public, in its expectation, will accept organizational change on faith. Growing doubt of and dissatisfaction (undefined) with the status quo, the climate of educational foment, and, in highly competitive areas, the constant search for community status symbols are factors creating this acceptance. With the professional rests only the responsibility that he keep the faith.

As one who has been in large part responsible for a major

shift in organizational pattern in the elementary schools of our district (a shift, incidentally, bitterly opposed in some educational squares), I recognize clearly that a sincere and abiding belief in the probable improvement engendered by the change in pattern, and in the opportunity for betterment inherent in the organization, is an absolute necessity for the school administrator contemplating change. I believe that there is value in change for the sake of change. I do not believe this value is enough. The decision of the Ossining district to participate with the Long Beach (Long Island) Public Schools, and the Experimental Teaching Center at New York University in a test of the semi-departmentalized Dual Progress Plan¹ was made on the basis of what the plan would probably contribute to our educational program. The adoption, in September 1958, of the plan in grades 3-6 at Ossining, was determined by our belief that such an organization of our elementary schools would better serve our educational needs and purposes.

In essence, the Dual Progress Plan provides grade-level grouping and advancement in the language arts-social studies "core" and in physical education, non-grade-level grouping and advancement in mathematics, science, art, and music. In the plan, all elementary teachers of grades 3-6 are assigned, full-time, to one of the six "specialties" just listed.

It is natural that the evaluation of an educational program entails evaluation of organization. Identification of improvement and outcomes depends considerably on what the organization is and what it sets out to do. It is virtually axiomatic that the success of program and organization is determined, in no small part, by the manner in which they are instituted and implemented. It is even possible that evaluation can be skewed by the source of the idea of the new pattern. See how educational hackles rise to Rickover and are smoothed by Conant. Their ideas are not that divergent.

The philosophy of the Dual Progress Plan came from Dr. George D. Stoddard, Chancellor of New York University. The program evolved during 1957-58 through months of planning by a "Working Party" meeting at New York University, com-

¹ Stoddard, George D., "The Dual Progress Plan." *School and Society*, Vol. 86 (October 11, 1958), pp. 351-352.

posed of elementary specialists, school administrators, subject consultants, child psychologists, and research personnel. Both philosophy and plan might well have been developed by local staff study (as was our junior high program four years ago), by joint lay-professional study (as was our local Dual Progress Plan report form), by system administrative study (as was our scheduling and building operation), or by other means. What is really important is that the seed was planted, nurtured by administrative interest, and cultivated by the tender loving care of professional personnel. We did not deem it necessary, nor has experience proven otherwise, to put the matter of adoption of program to the vote of teachers or public. We did deem it mandated that both groups be as fully informed as possible—the public through group meetings, informational releases, and conferences; the teachers through individual conferences, and large and small group meetings. To an extent, these processes continue today. Of course, the board of education had to approve our trial of the Dual Progress Plan.

There is involved here an administrative philosophy which runs counter to that propounded in the current literature of educational administration and supervision. We believe that, as well as the development of staff leadership, leadership, itself, is a function of the school administrator. The ability to make decisions and to implement them is a necessary tool for successful administration. This does not, of course, deny the concomitant responsibility to recognize all possible factors involved. It simply maintains the right of responsible leadership to lead.

Evaluation of organization is determined by what the organization is and what it sets out to do specifically, within the broad aim of better serving educational needs and purposes. The Dual Progress Plan involves specialist teaching, ability grouping, and semi-departmentalization with ungraded classes in certain subject areas. Team-teaching may involve something else, as may team-learning programs and the "self-contained classroom." It is obvious that the results of our program, or those of any other, cannot be attributed to the organization until it is operational. Much of making it so is administrative by nature. Some, necessarily, intimately involves teachers.

Teacher area assignments for specialist roles in the Dual

Progress Plan were made by the school principals in as close correspondence as possible with the choices of the teachers themselves as indicated in individual conferences. Three choices, in order of preference, were solicited. In those instances where a choice other than the first was selected, teachers were again consulted and offered the opportunity to change schools (none accepted) in order to gain the preferred specialist role. Assignments of particular ability sections to particular teachers were made by the principal from his knowledge of strengths and weaknesses and, to some extent, desires of teachers.

The staff was involved in the grouping for the language arts-social studies "core" area, but not in the grouping for the departmental subjects. The differentiation was predicated on the nature of the grouping procedure; on the one hand, general and relatively traditional; on the other, specific and new. Time pressures played a part here, as did our desire to produce an efficient and effective procedure. As the year progressed, modifications of groups were made on the request of teachers. These changes were approved when student need was ascertained. A tight administrative rein was held on all facets to insure that basic design was followed.

Despite severe limitations of time which curtailed opportunity to complete teacher orientation and solve anticipated problems, the decision was made to begin the program in September. We felt our staff capable of making the precipitate adjustment and believed that the mechanical problems of organization could be more quickly and clearly perceived and solved by jumping in than by dipping a toe. This turned out fairly well. Many of the problems we had anticipated did not occur. Adjustment to the new organizational pattern was rapid. Our mistake was in assuming that a great deal of meeting time had to be spent in the orientation of teachers to the philosophic ramifications of the organization when, in reality, teachers were more concerned with the how than the why.

With the start of school, we had a semi-departmental program. Our student body was grouped for instructional purposes. Our teachers were assigned specific subject areas. Except for teacher involvement in pupil grouping and teacher indication of choice of assignment, the accomplishment of each of the above

was a purely administrative task. Principals and central office staff worked the entire summer to bring them about. Their being accomplished in fact, however, did not mean their being accomplished in essence.

It is at this precise point that the administrative function changes from direction and guidance to assistance, for it is at this point that the teacher is all. The success of grouping is dependent upon the teacher's use of the group and segments of it. I suspect that the lack of significant results from homogeneous grouping in the past rests, in large part, in the failure of teachers to adapt teaching method to the nature of the group. In the final analysis, too, only one person can assure the success of specialization, or the knitting together of a team. This person is not the administrator, but the teacher.

One needs to distinguish between aiding the teacher in achieving full utilization of organization, and in escaping from it. For the administrator this frequently involves deciding to make no decision, and at the same time, explaining exactly why. Teachers, in all their humanness, do look back in time of difficulty to the time when the difficulty was not present. To return to the past serves only to escape the problem, not to solve it. The decision to make no decision does not mean ignoring the problem and does not negate the absolute responsibility of the administrator to provide real help in solving the problem posed. Time alone will not answer all questions, but time is needed to find the answers.

The administrator must be honest with self and with staff. He cannot allow himself to be blinded by his belief in the new organizational pattern to the exclusion of real perception of teacher's problems and suggestions for modification. This entails full investigation by administrator and teacher, a search for answers or alternatives, and, finally, a decision based on reason. There is need to protect design but no justification for holding it totally inviolable. Minor changes may alleviate an eventual necessity for major ones.

As we look back from a vantage point of two-and-a-half-years' experience with a new elementary organization, from a point where the basic facets of that organization are to a greater, rather than lesser, extent in effect, we cannot help but view with

satisfaction the things accomplished. Certain factors of our implementation of the program assume considerable importance in retrospect. It was important that the administration held to itself the right of decision. It was equally important that teachers were constantly involved in the process of arriving at decisions where they wished to be involved, and where matters under consideration had direct bearing on the teaching-learning dichotomy.

It was important that the nature of our staff was such as to permit our jumping into the organization per se, and that we did so. It was important that the staff (even those in opposition to the change) was willing to expend the time and effort necessary for a fair trial of the program. It was important that real assistance was provided teachers in solving problems.

But most important, was the feeling pride of us all, teachers, administrators, and community, in undertaking a new endeavor which, despite attacks and belittling from some quarters, has placed us at the forefront of American education. Change is vital and vitalizing!

The Role of an In-service Program in Establishing a New Plan of Elementary School Organization

Gilbert M. Trachtman

In-service traditionally refers to the training of teachers in service and implies a teacher-centered, administration-imposed supervisory program. However, in implementing a total reorganization of the Long Beach, New York, elementary schools, as is required by the semi-departmentalized Dual Progress Plan, it quickly became apparent that all of us—teachers, specialists, supervisors and administrators—were learners. There were no answers available for some to spoon-feed the others, and it was

obvious that implementation of this new program would proceed most effectively through goal-centered group activity in which all members of the educational staff worked together.

In this context then, in-service as used in this article has two different meanings. In the narrower sense it refers to the specific in-service courses made available to teachers as part of the program for developing elementary specialist teachers in various subject areas. In a broader and more dynamic sense, in-service refers to the total massive effort by all staff members involved in the Dual Progress Plan—a massive effort involving learning by doing, learning by sharing, learning by observing, and even learning by complaining. Administrators and supervisors have learned more from teachers than they have been able to teach them. Consultants and experts provided by the Experimental Teaching Center at New York University have furnished valuable assistance, but have also frequently learned as much as they taught.

The program for in-service development of our staff was not based on long-range plans, but was shaped and re-shaped each semester in an attempt to recognize and face implementation problems as they became apparent. This procedure is still in process, and it is, therefore, pointless at this time to attempt the laying down of guidelines or principles for others to follow along the rocky road of elementary school reorganization. However, a brief chronicle of the sequence of our experiences to date may allow the reader insights pertinent to his own situation.

The Dual Progress Plan is being demonstrated and tested in grades 3-6 of the Long Beach and Ossining elementary schools in cooperation with the Experimental Teaching Center at New York University, under a Ford Foundation grant. This grant began in July, 1958. However, in Long Beach it was decided that the first semester should be devoted to preparation, with actual implementation beginning in January, 1959. The summer of 1958 was devoted to administrative planning, and in early September each principal, working with his faculty, designated each teacher as a specialist in some subject area based on training, background and expressed preference. In some cases no teacher in a school possessed a solid background in a particular subject. Specialist assignment was then based on a teacher's

expressed willingness to "take on" this assignment and to begin training as a specialist in that area. Teachers and administrators both realized that labeling could not create a specialist, and the immediately felt need, therefore, was to provide in-service help for teachers in their "specialty." This necessitated setting up a program which would cut across school lines, bringing teachers together by subject area. At the same time it was necessary to arrange series of meetings, school by school, to deal with planning and implementation problems of a local nature, and district meetings to deal with general policy and planning, and orientation towards the new program.

In a study of obstacles encountered in programs of in-service education, Weber¹ found two major problems to be most prevalent: (a) time and work load pressures; and (b) an unprofessional attitude among teachers. An attempt was made in Long Beach partially to anticipate the first problem. A program of early dismissal was inaugurated on a regular basis, with school dismissed an hour earlier on Wednesdays. This time, one hour each week, was reserved for all planning and orientation meetings. Meetings varied from week to week. Some focused on one or another local school, others on certain subject areas, others were district-wide. Some were only with teachers, some with administrators, some with both. Some meetings were conducted by the Superintendent of Schools, some by the Research Coordinator, some by special service personnel. Representatives of the Experimental Teaching Center conducted many meetings and participated in others. On any given Wednesday, those teachers not involved in a scheduled meeting were free to remain at their own school, using the time for clerical work, parent conferences, or lesson planning. Some principals utilized such occasions for additional planning conferences with groups of their own teachers. Although attendance at all of the above-described conferences was mandatory, these meetings were all conducted during regular school time and so constituted no additional burden on the already overburdened teachers.

The second major obstacle defined by Weber—an unpro-

¹ Weber, C. A. "Obstacles to be Overcome in a Program of Educating Teachers In-Service," *Educational Administration and Supervision*, Vol. 28, December 1942.

fessional attitude among teachers—proved to be no problem in Long Beach. A regular program of in-service courses, covering specific subject areas for specialist teachers, was organized after school hours. These courses met late on Wednesday afternoons, and registration was on a completely voluntary basis. Nevertheless, despite teachers' heavy schedules, and despite the fact that teachers at this time were fairly evenly split on their attitudes toward the Dual Progress Plan, 90% of all teachers involved registered for these courses. The highly professional attitude of the Long Beach staff may be further demonstrated by the fact that, although a salary differential is paid for the accumulation of in-service credits, many teachers registering for these courses had already amassed maximum differential and would receive no material benefit from participating.

Each in-service course consisted of fifteen two-hour sessions extending through a school term. Each term a new program of courses was organized as needs or perception of needs developed. This on-going program of courses, now ending its third year, proved to be a crucial factor in the implementation of the Dual Progress Plan. The program met certain needs, providing concrete assistance and preparation for some teachers, security and support for others, and opportunity for exchange and professional growth for still others. It pointed up certain other needs which we were then able to meet, such as the need for local supervision of certain curricular areas, hitherto unassigned to any one individual, or the need for a different type of curriculum adaptable to Dual Progress Plan philosophy. It failed to meet some needs, and, therefore, we are still making changes, modifying the nature of our courses each term, and looking elsewhere for the solutions to some of the unmet needs. Thus, for example, the problem of how to achieve better results with low-ability groups may ultimately be attacked through an in-service course on methods of teaching slow learners, through a program of classroom supervision utilizing experts in special education techniques, through curricular revision, through refinements in grouping criteria, through improvements in programming and scheduling techniques, or through some combination of the above and other possible approaches.

Organization of the initial program of in-service courses was

greatly simplified by the semi-departmentalized plan for which we were preparing. The immediate anxiety felt by most teachers was in regard to their readiness or competency to assume the specialist role, and the immediate demand was for aid in preparing for this role. Thus, a series of courses was organized utilizing some of our own subject specialists and outside specialist consultants in particular fields, such as language arts-social studies, or mathematics. These experts were provided or recommended by the Experimental Teaching Center. During the first semester teachers hungrily absorbed teaching tips and techniques, demonstrations of lesson planning approaches, and presentations of new teaching materials—all aimed at their particular subject area.

In January 1959, the first stage of the plan was put into operation and teachers began functioning as specialists in the semi-departmentalized program. Thus, as the second semester of in-service began, teachers began to participate more actively in each course, bringing in actual problems and situations for discussion or advice. Although the outside experts continued to be exceedingly helpful in many cases, by the end of the first year it became apparent that there were certain inherent limitations to their usefulness. Once the in-service course attempted to move from theoretical presentation to practical application, there was need for follow-through from the course to the classroom. Many problems could not readily be appreciated by an outside consultant unfamiliar with the actual operation of the Dual Progress Plan. Curriculum development had to proceed from an intimate knowledge of the existing program.

Thus, developing out of the in-service courses, was the growing recognition of the need for local leadership. This resulted in the development of a supervisory team with responsibility eventually defined for each subject area. In some areas high school departmental chairmen were given K-12 supervisory responsibilities; in other areas DPP subject consultants were appointed from staff. Gradually, local staff supervisors took over the leadership of in-service courses until in September 1960, all in-service courses were conducted by local personnel. The Experimental Teaching Center continued its cooperative role with concomitant modifications. In some cases local staff supervisors made regular visits to the University to work with Experimental

Teaching Center consultants on problems of curriculum development. In other cases University consultants visited Long Beach to consult with local staff on problems of classroom test construction, grouping procedures, etc.

In addition to the in-service courses conducted primarily for teachers in the Dual Progress Plan, several additional courses were offered each term at other times of the week, primarily so that K-2 and secondary teachers might also enjoy the opportunity to benefit from local courses. Courses were offered in such diverse areas as Test Construction for Classroom Use, Audio Visual Techniques, Speech for the Classroom Teacher, Teaching the Slow Learner, Developmental Reading, Working with Parents, Transition to Adolescence, and Understanding the Child Through Psychological Evaluation. Many of these courses were also attended by specialist teachers in the Dual Progress Plan since most of the topics covered in these courses tended to cut across all subject areas.

At the same time, the creation of an organized supervisory staff, stemming from needs indicated by the program of in-service courses, resulted in the gradual introduction of an even broader program of in-service development. During the first year, series of routine conferences had been scheduled with various groups. A Teachers Advisory Group, including two representatives from each school, had met frequently to discuss problems connected with implementation of the Dual Progress Plan and to serve as a direct communication link between faculty and administration. A series of conferences had been held with special service personnel, discussing their role in the new program. A series of meetings had also been conducted with the Superintendent, principals, and supervisory staff, concerning implementation policies. Representatives of the Experimental Teaching Center had participated in many of these sessions. All of this culminated in the 1959 Summer Working Party, consisting of principals, supervisors, special service personnel representing psychology and guidance, and representative specialist teachers. This group participated in a workshop devoted to planning and problem solving for the year ahead.

During the second year, in-service courses began to focus on the need for curriculum revision, and some in-service groups

began actual work on curriculum development. This culminated in the 1960 Summer Working Party, consisting mainly of subject supervisors, principals, and specialist teachers working on the development of new curriculum sequences in language arts-social studies, mathematics, and science. The newly prepared materials thus became the basis for the next series of in-service courses and, simultaneously, a series of district-wide meetings was scheduled for first- and second-grade teachers. These primary-level meetings, conducted in sequence by each of the subject supervisors, have aimed at the introduction of new curriculum materials and approaches in each subject, with the goal of articulation between teaching in the primary grades and in grades 3-6 under the Dual Progress Plan.

At this writing, the total in-service program is undergoing still another change in emphasis. In-service courses for the next term will focus on more specific goals in each subject area. One group will work solely on expansion and elaboration of the present curricular sequence. Another group will focus on broad enrichment of content background for the specialist teacher. As each course becomes more specialized in approach, it is expected that a smaller percentage of each group of specialist teachers will choose to enroll. To compensate for this, and to maintain ongoing interaction and communication, all specialist teachers of a particular subject will meet monthly with their supervisor. Meanwhile many problems relating to grouping and scheduling of students remain, and these will probably be the next major areas for improvement. With three years almost ended, it would seem that a full five years is indicated for a total in-service attack upon the problem of implementing a complete educational program. However, with lessons we will have learned by then, it would not be impossible under similar circumstances in future to accomplish such a program in three years.

Grouping within a School

John M. Bahner

Mary was the brightest girl in the classroom. A few desks away sat Johnny, the slowest in the class. These two children were almost as different as day and night, yet there were also thirty other unique individuals in the classroom and only one teacher. Furthermore, every teacher in Englewood School was faced with the same problem. As individual teachers they had already adjusted their methods of teaching in an attempt to provide for these differences in children; but, if every teacher had the same problem, perhaps some schoolwide solutions should be attempted.

Throughout their experience, these teachers observed that the individual children and groups of children had a range of academic abilities and attainments that extended over at least several years. Thus, they could state with firm conviction that a single grade designation could never adequately describe the achievement level of either a single class or a single child. It seemed obvious that some children were going to need a longer period of time than six years to achieve most of the goals of an elementary school program and, conversely, that others would be ready to profit from the next unit of school organization after only five years in the elementary school.

HETEROGENEOUS GROUPING IN COMBINATION GRADES

These observations indicated a need for a type of organization that would enable all children, fast and slow, to move smoothly through the school at their own rate without either skipping or repeating. Both an ungraded structure and an increased use of combination grades were discussed. The school already had a combination second-third-grade room and a fifth-

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sixth-grade room. The two teachers who had these combination grades expressed satisfaction with them and reported only minor problems of parental understanding. Since none of the staff had the benefit of any experience in an ungraded system and since it was doubtful that such a plan could be presented adequately to the community before the end of the school year, it was decided to organize classes for the following year as follows:

Kindergarten—two sections (Financial conditions necessitated having only one teacher for the two sections.)

Grade 1, 1, 1-2, 2-3, 3-4, 3-4, 4-5, 5, 5-6, and 6

A line over a number indicates the section where the three or four most advanced children of a grade were placed; a line below a number indicates where the three or four most retarded children were placed.

This plan was followed to prevent a teacher from having to work with the extremely accelerated and the extremely retarded in the same classroom, yet heterogeneity is still retained—a condition which the staff felt was important. At the same time, placing the extremely advanced or retarded in specific rooms reduced the range in any given classroom to a point where *a teacher with a combination class could see no difference in the range of abilities as observed the preceding year with a single grade level per classroom.*

As the staff seized every opportunity to explain the reasons behind this type of organization through parent-teacher meetings, study groups and individual conferences, parents began thinking of children of a given age level as having a wide range of abilities. They realized that a child's reading ability is most apt *not* to be the same as his ability in arithmetic. For the most part, they accepted as perfectly natural that some children (not theirs, of course) need longer than six years to move through the elementary school program. Even for those who do not accept this, the various combination grades will probably obscure the movement of a child sufficiently so that only his parents will realize if he takes more than six years in Englewood School.

Johnny is a boy of low scholastic aptitude. All the evidence gathered during his two years of school indicates he will profit

by having seven years in the elementary school. This year Johnny is in a 2-3 class. Next year he will be in a 3-4 class, the following year probably in a 4-5 class, and the year following perhaps in a straight fifth grade. Thus he will have taken three years to cover what is typically known as the third and fourth grades.

Of course, if Johnny's ability has been misjudged or if his growth pattern changes to a point where it no longer seems desirable to have him spend seven years in the elementary program, he could be placed in the sixth grade three years from now without any dislocation in his progress. In either event, there will be no social stigma attached to his decelerated rate of progress. There has been no boring repetition of a grade; he is making numerous friends among his somewhat younger classmates who are achieving at various levels along the learning continuum.

Through a similar use of the combination grades, an extremely mature, "gifted" child goes through a typical three- or four-year grade span in one less year and completes the elementary school program in five years. There is no skipping of any essential skills or being thrust suddenly into a group one year older chronologically.

Mary, who is in her fourth year of school beyond kindergarten, is an academically advanced child with high social and emotional maturity. This year she is in a 4-5 class and next year will be placed in a 5-6 class. At the end of next year she will probably be passed on to the junior high school, thereby completing the last three grades in a two-year period. If she does not live up to this expectation, she will be placed in a sixth grade at the end of next year.

TEAM TEACHING

The graded structure of the elementary school was not the only tradition put under scrutiny by the Englewood School faculty. Another obstacle to better provision for individual differences seemed to lie in the traditional concept that a single teacher must work always with approximately thirty pupils. This seemed to be too restrictive. Therefore some of the faculty de-

cided to plan and work closely together in teams of two or three teachers. During that same year in which the school planned having combination grades, one of the closely knit teams in operation involved a woman teacher with a third-fourth grade combination and a man with a fourth-fifth grade combination.

The typical day for this team began with a fifteen- or twenty-minute planning period during which each group discussed with its teacher the day's general plan and individual work. Reading groups then occupied the next hour and one-half. Each teacher had from two to four groups (this varied as the need arose throughout the year) composed of children with similar reading achievement levels from both rooms regardless of their grade placement.

Next came a short break for the morning fruit juice, followed by the physical education period when the two classes combined. The teachers planned this period together. Then one assumed responsibility for the total group while the other took a break, collected materials, evaluated the work of pupils, or performed other needed tasks. After the physical education period, these sixty-five children remained together for a story period, music or art. The teacher who had the preceding half-hour away from the class assumed full responsibility now, while the other teacher had an unscheduled period of approximately twenty minutes.

From this point until lunch, the sixty-five children were divided into four arithmetic groups on the basis of achievement—again without regard to their grade placement. Each teacher worked with two groups.

The program after lunch varied considerably. Often there was some type of project going on, with the two classes sometimes combined and sometimes working separately. Special interests and abilities of the two teachers often determined just how the two classes operated. For example, both classes worked together on an electricity unit with the man assuming the major responsibility for planning the lesson, gathering the materials and doing the group instruction. The woman member of the team performed as an aide during this project, helping individuals and small groups. Later on, the teachers reversed their roles while undertaking a unit on space.

Although sometimes taught as separate entities, social studies, science, music and art were integrated during the afternoon period. Of course, individual work going on during reading groups was often based on the units or projects then in progress.

MODIFYING TRADITIONAL PRACTICES TO FIT BELIEFS

The variations of team teaching being practiced at Englewood School are too numerous to describe in this article. However, these descriptions are not as important as the fact that this staff has shown that professionally-trained teachers, given freedom to develop improved educational practices, rise to the occasion and modify traditional practices in line with their educational beliefs.

Further faculty effort undoubtedly will modify present innovations in grade organization and teacher utilization. The traditional grade structure is fast being replaced by the ungraded concept. New insights into team-teaching techniques are emerging. The Englewood faculty is pleased to join company with other groups who are seriously questioning long-established practices of grouping children within a school.

By Their Differences They Learn

Warren Hamilton and Walter Rehwoldt

Did we "throw out the baby with the bathwater" when we brought American education out of the little red schoolhouse and then discarded the practice of having pupils from several grades in the same classroom?

The first step in the organization of the larger school as we moved away from the little red schoolhouse was to group children

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into classes according to their similarity of achievement which was identified as a grade level. The philosophy upon which such a grouping pattern was based assumed that greater learning took place when children of similar achievement were placed in the same classroom. Such practice and philosophy has not been substantiated by educational research or by what we have learned about the growth and development of children. However, the practice of grouping by grades continues, primarily because of administrative expediency and the contention that teaching is easier when a group consists of a single grade.

Have we sufficient knowledge that justifies collecting children of similar characteristics into one classroom for their education? It is the authors' contention that grouping on the basis of similarities cannot be justified and that such practice needs to be re-examined. Basically, the point of view that denies grouping on the basis of similarities is that we learn from those who are different from us as well as from those who are similar to us. We learn a foreign language more readily by associating with those who speak the language. We gain maturity partly by living with those who are more mature than we, or by having responsibilities for those who are less mature than we.

A CONTROLLED EXPERIMENT

In an attempt to determine whether such results would actually take place, the authors conducted an intensive and well-controlled study by setting up seven such multi-age, multi-grade groups and comparing results with eight single-grade groups within the same school and twenty single-grade classes from five other schools in the same district. Comparisons of gains during one school year were made and treated statistically in the areas of reading, language, arithmetic, personal adjustment, social adjustment, social maturity, certain characteristics of behavior, and pupil attitudes towards school. The comparisons were made both on the basis of general averages and by the matched pair technique. An analysis of parental and teacher attitudes towards this pattern of grouping was also made. The conclusions reached after careful analysis of the findings were as follows:

1) The academic achievement of pupils in wide age-grade range classes was greater. Twenty-two out of thirty-six comparisons favored the multi-grade groups.

2) Pupils in multi-grade classes made greater improvement in personal adjustment including the components of self-reliance, sense of personal worth, feeling of belonging, and freedom from withdrawing tendencies. Eleven of the twelve comparisons were found to favor the multi-grade pupils. The evidence also revealed that the younger children in these classes tended to be more secure and less withdrawn than the pupils of similar age who were enrolled in single-grade classes.

3) The social adjustment, consisting of social standards, social skills, family, school and community relations, and freedom from antisocial tendencies, was found to show greater improvement among multi-grade pupils. All of twelve comparisons favored the multi-grade pupils. In this category the oldest pupils in their respective groups made the greater improvement over their age peers in the single-grade classes.

4) Social maturity, including the behavioral patterns of occupation, locomotion, communication, socialization, self-help and self-direction, consistently showed greater gains on the part of pupils in multi-grade classes. Ten of twelve comparisons favored the multi-grade pupils. Again, the older pupils showed the greatest gains over their age peers in the single-grade classes.

5) In certain characteristics of behavior, consisting of manifestations of leadership, aggressive maladjustment and withdrawn maladjustment, the pupils of multi-grade classes made greater gains in all of the twelve comparisons that were made.

6) The attitudes of multi-grade pupils towards school, consisting of feelings toward classmates and other pupils, liking school, feelings of security in the class and feelings of success, were found to be better for multi-grade pupils than for pupils in single-grade classes. The comparison revealed a very significant statistical difference in favor of multi-grade pupils.

7) Parents of multi-grade pupils strongly supported the grouping pattern after having their children in the program for one year.

8) Teachers and administrators in the school where the

experiment was conducted agreed with the hypotheses favoring the multi-grade pattern of grouping.

FURTHER COMMENT

Let us assume that a school is made up of classroom groups, each group including children with a range of three or four years in age and grade. In such a group the younger children, according to our findings, should be stimulated by working with the older children. They can observe and listen to the older children and tend to model themselves after them. They can be helped by the older children in many different learning situations which will tend to enhance their learning. In turn, the older children may profit by being the examples—a situation which increases and strengthens their own learning. By assuming responsibility for others they in turn can become more mature.

A group of wide age and grade range more nearly resembles groups outside of the school such as the family or a neighborhood play group. In work and play groups outside of school, age ranges are found to be quite flexible and wide. Our study seemed to indicate that in groups of children of like ages there will be much more yelling, contention, and bickering, with a struggle to be the "top dog," than is true of a group of wider range. Hence, in a school group of wider age range there can be greater acceptance of individual differences among children with the accompanying results of better pupil-pupil relations. Such experiences tend to establish positive patterns of group behavior and bring about greater progress in learning to live and work together harmoniously.

In such a group the achievement standards for each pupil more frequently are tied to the individual rather than to a grade standard. Thus the accepted concept of providing for individual differences will be more nearly met by the brighter pupils achieving beyond their grade level, and the less capable should more readily reach their educational expectancy as a result of less frustration from having pressures placed upon them to reach a grade standard. It would be the normal pattern to more nearly approach a program of individualized instruction which frequently has been shown to be the method that brings about the

greatest progress on the part of pupils. Since the children are obviously different, no one would expect a common goal for every one or assign the same lesson for all or use the same book. In specific skills there would have to be more individualized instruction because of the wide differences. Thus grade-level standards no longer would be the objective. Instead, the optimum development of each individual pupil becomes the goal.

In a group with wide age and grade range, according to our study, the learning experiences can be richer, more meaningful and more cooperative. The essential quality in a learning environment is difference rather than similarity. The group will be composed of children of different ages, different interests, different abilities, and different accomplishments. The greater these differences, the more children will have to learn from each other. Those who excel in one quality will contribute to the enlightenment of others. Thus the diversities of the various members of the group can enrich and extend the learning experiences and opportunities of all the members of the group.

Such a grouping pattern within a school will make possible a greater flexibility, enabling the school to place children in any of a large number of groups instead of being limited to placing children in one of a few groups. Thus the school can place a child in a group which will provide the best pupil-teacher relationship and will also permit the optimum opportunities for an individual child. A pupil who goes through school where such a pattern of grouping is the practice will be a member of the younger portion of a group one year; of the middle age group the second year; and of the older age group the third year. It is easy to see the advantages of such experiences in contrast to always being the youngest, the average, or the oldest in a group as he advances through the school.

The attitude towards school on the part of pupils in multi-grade, multi-age groups was found to be better. As pupils experience the various advantages that have been listed in the foregoing comments, their individual growth needs should be more adequately met—a situation which can only result in satisfaction with their school experience and an accompanying good attitude towards school.

In light of the substantiating evidence revealed by the

study, the authors strongly support a grouping pattern based upon differences rather than upon similarities among children. There is great need for more schools to engage in experimentation and study in this pattern of grouping of children.

Interage Grouping

Wesley H. Carlson

During the past 20 years a number of public and private schools throughout the United States have been experimenting with various ways for grouping young children. One of the most successful of these systems has been the interage grouping. This is a plan of school organization in which an effort is made to provide maximum opportunity to meet the individual needs of all boys and girls, by combining the flexibility of the old country school, the facilities of a modern city school and the know how of present day research.

WHAT ARE THE FACTORS?

For the best education in an elementary school the following factors must be considered: (a) The operations of the school must be flexible; (b) There should be a general growing-up process in place of the grade placement system; (c) A child must have a purpose in education; (d) A group should operate in a democratic way; (e) The mental health of children is of prime importance; and (f) A child should be respected as an individual.

1) *The operations of the school must be flexible.* The desirable type of experience is qualitative rather than quantitative; therefore, a flexible type of school organization is necessary. The child must be free to explore. His course of action would take

him into the community where he would be aided in discovering and in seeking satisfaction for his needs as he grows. The situation may well expand outward for depth of understanding.

With this type of organization there would be no need for definite grades "per se." Grade placement tends to limit the capabilities of a child. A group should be heterogeneous. How good is the system of standardization throughout the school system? Isn't it a commonly accepted opinion that a group of varied backgrounds tends to give a broader outlook to a problem? This type of class is striven for in seminars, in the solution of civic problems, etc.; therefore, would not our elementary classes be enhanced by deemphasizing the unimaginative places where standardization tends to reign?

It is felt by many that fixed grade standards, units that "culminate" and grade groupings that mark education into distinct steps are barriers to continuity in learning.

Children are purposefully selected through results obtained from sociometric tests and objective and subjective evaluation by the teacher of the child's social, academic, emotional and physical development.

An interage system is advantageous in placing a child in a group that seems to offer the greatest learning opportunity for him. A healthy class climate is more conducive for children to learn in. This grouping makes the efficient placement of a child more feasible, by allowing more freedom in placing the child in one of several groups. Teachers at the beginning of the year can compose groups with greater learning potentials.

Children are gregarious, which makes group integration vital. The oneness of the group tends to increase the quality of the experience for each individual. In finding answers to questions, solving problems or fulfilling a need, the ideas of many, working in a common group, will have far greater effect than the ideas of one individual. Likewise, the greater the quality of cumulated past experiences the group brings together, the greater will be the quality in the thinking.

Interage grouping can help to make possible better balance between the two sexes. Overly hostile and aggressive children can be spread throughout the groups and not concentrated in one

class, thus giving them the opportunity for more individual guidance.

2) *There should be a general growing-up process of the grade placement system.* Interage grouping tends to stress maximum individual growth and reenforces the fact that a child is growing continuously and does not reach definite levels of attainment at the end of each year. The first schools in this country were ungraded. All the children went to school in one classroom. As our population increased schools became crowded. Grade organization was developed to take care of large numbers of children for mass teaching. Each classroom became a grade and acquired definite grade standards which all pupils were required to meet during a given year. If a child failed to meet the minimum essentials he was and still is expected to repeat the grade. Recent research studies show that it is better for most students to continue with their group rather than be left back. It is obvious that not all children are able to attain these minimum essentials, and it would not be administratively expedient to hold back these children. It is generally felt by authorities that nonpromotion does not maintain grade school standards, does not appreciably decrease the variables within a grade, is not a good motivation factor, and does not bring about better adjustment.

Youngsters of a given age do not have the same growth patterns or achievement during any "grade." To say all youngsters are to be promoted so they will continue to grow alike educationally is to disregard the facts.

In an interage group a teacher could be compared to a horticulturist who specializes in the raising of gladiolas. First, he prepares the soil to provide the best growing conditions. He is conscious of the previous handling, dipping and storing of the plants, and of the conditions that are necessary before he can plant them. After he has planted the bulbs, he nurtures the plants through their entire growing season until they have reached their fullest bloom, constantly giving attention to individual plants. Yet he gives them all the same type of care when it is expedient.

The growth and development of a child cannot be forced to fit into arbitrary time intervals. The brain does not grow at the same rate of speed as the glands of the body nor do these

sections of the body grow at a continuous rate of speed. Similarly, a child may not be ready to learn to read when he is ready for numerous other things. Children's first experiences in school should be successful and satisfying. Plans and procedures must recognize all of a child's needs—physical, social, emotional and spiritual, as well as intellectual. Wide differences exist among individuals, which calls for careful planning so that growth may be wholesome and continuous. Child growth is complex and each child has a "pattern" of growth that makes him "different" not only from other children but from other developing patterns of his own growth.

3) *A child must have a purpose in education.* Unless there is a purpose to learning the student will not act sincerely, and the learning experience will not have meaning. Each individual has his own growth pattern. Each individual learns in proportion to the learning experience provided, the amount which applies to his own needs. Although the curve of learning will differ from child to child, each child should show achievements according to his ability.

Informal experimentation of the teaching of reading tended to show that children of average intelligence or above can learn to read satisfactorily during their first three years in school, if their needs for this experience are adjusted to their abilities. In an average first-year group probably a third of the children will be ready to learn to read early in the year and will make "normal" progress. Probably another third of the group will need special help in some aspects of reading readiness and will start a little later. They should be making good progress by the end of the year, but will be below the standard of the more "mature" children. The other third of the group may spend half the year or more on experiences designed to build the reading they need and will make only a beginning during the first year. Because of the careful attention to their needs, they will accelerate their speed of learning as they gain in maturity, and may do as well as the more rapid starters by the end of the three-year time span. This parallels what is known about children learning to talk. Some use words very early and are fluent speakers by the time they are three years of age. Others are very slow in developing speech and may be distinctly retarded linguistically at the

age of three. When these children enter primary school at the age of six it may be impossible to tell them apart. The slow starters may speak as well and talk as much as those who started earlier. The end result is approximately the same, but the curve of learning has been different. The same may be true of learning to read.

The differences in the capacities of the other skills is equally great. There can be no justification for the practice of assigning the same lessons continuously to all children, regardless of the subject.

The teaching of social studies also presents a challenge to the teacher. Any experience or activity in which children engage requires the participation of groups of pupils of different levels of maturity. All pupils will not be ready to engage in the same type of reference work, written reports or oral discussion. A committee organization is the goal, within which each one can find his place and in which he can be encouraged to make his maximum contribution.

4) *A group should operate in a democratic way.* Democracy places its highest value on people. Our schools must insure freedom of expression, promote creativeness, and develop skills. Emphasis also must be placed on developing sociable human beings who can work and live cooperatively with others, and who understand how to solve their individual and group problems with consideration for all.

Realizing that there may be child-like solutions to these problems, a great deal depends in early childhood upon the teacher, and to a greater degree, the parent. The teacher should have the insight to lead or direct children to be less dependent each year and to assume greater responsibility in proportion to their development and growth.

Children learn democracy by practicing it. As a member of a democratic society, it is one of our duties to respect the rights of all individuals. We should believe that every person who must abide by a decision should have a part in making it. The decision must come from inside the situation and not outside of it. This does not mean that a "laissez faire" atmosphere must prevail. The child must have responsibilities to the group which match his

capabilities. He must respect the rights of others when working on a common core.

5) *The mental health of children is of prime importance.* It is easier to prevent maladjustment and failure than it is to care for the complex problems which accompany these misfortunes. If children were placed in small interage class groups, it would be appreciably less difficult to study each individual child and adapt the curriculum to his needs.

Good mental health is not achieved merely by the removal of obstacles, but when the "needs" of an individual are met. The organization of an interage group should tend to meet individual needs. It should help in developing a sense of personal worth by providing opportunities for each person to experience the satisfaction of his needs for belonging, achieving success in some activities, developing meaningful personal goals and values. Interage grouping should help to develop good interpersonal relationships through the experiences and satisfactions entailed in cooperatively participating with others. The achievement of group goals and the gradual expansion of the type of groups in which a child finds himself are of inestimable value.

The needs of boys and girls have become more apparent in recent years. A smooth transition from the home atmosphere to that of group living in school has come to be recognized as both reasonable and necessary.

Some children have been put under strong pressure to follow an external, imposed, artificial program so that their own best sequence pattern has been interrupted. Sometimes fear and tension have accompanied the pressure. To blindly learn what someone else has planned leads many individuals to work at less than par. The "passing of time" during any grade only widens the gap that separates children's achievements in the common learnings.

All children should begin school by coming to think of themselves as productive learners. No child need learn that he has come to the end of learning—that he has easily done all there is to do. No child need learn that he has come to the end of his ability—that it is hopeless for him to try to succeed.

All children have the healthy experience of being able to help others as the basis for planning and guiding in their learn-

ing experiences. One aspect of personality growth of any child is different from the other aspects of personality of the same child.

A child's readiness for each experience must be considered. A child working at a high level will need to be challenged and provided with rich opportunities. Another child will work at a slower pace and will need much help and guidance. Concern for the individual demands thoughtful planning as well as a wide variety of materials, activities and experiences.

In an interage class teachers are free to help individual children learn in ways best suited for them. A seven-year-old who likes to swing with his six-year-old friend can still read books about rocket ships with his eight-year-old friend who has like interests. An eight-year-old who is lacking in reading skills but who is able to do difficult arithmetic problems, need not "stay back" in a grade with younger children on the basis of reading.

One of the purposes of the interage unit is to dispense with rigid plans of "grading" and promoting of young children and establish an educational program based upon the natural development of each child in his own pattern of growth.

In an interage group, with its age span, the children work at different things in different ways, and no one is made to feel conspicuously ahead or behind the other. All children have the healthy experience of being able to help other children in some things and accepting help in others. Flexible grouping and individualized instruction make it possible for each individual to work up to his capacity and to progress as rapidly as is possible for him. Superior children should be stimulated because there is no grade average with which they could become self-satisfied. No ceiling is set on their learning. They grow according to their needs regardless of their age. There is no restraint in growth and the teacher presents a challenging program equal to the child's abilities.

It is inevitable that some children will progress at a slower rate than others. Often children who show a slow learning pattern in the early primary years make a sudden spurt at the later primary or early intermediate level. Other children, because of the quality of their home environment, mental ability, emotional and social development, or because of physical defects, remain slow learners always. But in every case each must be helped to

realize his own strengths and limitations and to strive for maximum success at his own level.

These children should be relieved of tension producing, growth retarding grade standards and expectations, thus making it possible for them to feel comfortable with differences in maturity and ability. The slow learner should not be placed with less sociable, less mature children. Neither should he be labeled as "stupid" or any other such term. In an interage class he does not "stick out like a sore thumb" but can be placed in a group with which he feels at ease. The attitude of the other children toward him and what he thinks they think of him, in many cases, is more of a hurdle to overcome than the learning of the specific techniques and skills involved.

The lessening of peer status squabbling, stratified subject matter demands, group norms, and other pressures should result in a warm, friendly group, free of tension, made up of students conscious of their responsible roles as group members.

6) *A child should be respected as an individual.* Respect for a child as an individual will provide wholesome leadership-followership experiences of unusual number and variety. One of the finest outcomes of this experience is the relationship that can exist between younger and older members of the group. It stimulates cooperative attitudes among children and reduces pressure because of less competition to meet a certain standard. For example, in the family unit, younger members respond to the stimulus of the older members and without undue pressure will want to do things that older ones are doing—both in terms of material they handle and the quality of their performance. The older children, under the guidance of the teacher, find new ways of growing as they assist younger children with their work: they achieve new levels of satisfaction and responsibilities by becoming useful to the group as a whole. This should result in the development of better social integration by the end of the year.

GOAL: CONTINUITY OF GROWTH

A master teacher for several years, rather than brief intervals under the care of several teachers, should result in productive learning for the children. Each teacher who conscientiously tries

to meet the needs of children, spends considerable time in getting acquainted with a child and learning his needs. Promotion, coming at frequent intervals, tends to disturb the continuity of the child's learning and decreases his effectiveness. Frequent change of teachers undermines a child's security in attacking tasks, since each teacher differs in methods of work and in approach to problems of teaching and learning.

A teacher thoroughly acquainted with the philosophy and the standards of attainment toward which he will point his efforts over a longer span, can plan his work more systematically around the needs of the children under his care. He need not feel pushed for time or held in line by rigid grade requirements. These are his children to guide and help to develop for two or more years.

There is more opportunity for thorough understanding of each child and effective use of that understanding in long range planning for and with the child in an interage unit. A teacher living with a group of children for a period of two or three years also has more opportunity to build rapport with parents and to develop wholesome home and school cooperation. Growth records can be more thorough and reports more meaningful and valuable to parents. Much can be gained by the teacher, by continuing with the group, for he can evaluate his procedures and practices over a longer period and search for better methods.

Children's curriculum experiences can be vital and continuous. Complete records of each child's growth and of parent-school cooperation are a must for maximum development.

An interage primary unit does not in itself guarantee a good educational program. The teacher is still the crux in the implementation of this program, but a teacher, free of inflexible restraints which an interage group offers, should do a better job. The nature of this type of grouping also encourages the teacher to put forth his best effort in meeting the individual needs and abilities of the children.

PART VI

Nongrading

THE CONCERN for a balanced method of grouping in the schools is, of course, a prominent controversy in education. How can we provide more flexibility in educating the child and also in employing the maximum capabilities of the teacher? We know that repeating a grade yields little or no advantage to a child, yet what alternative? What sort of school organization could practice the wholesome idea that the child should progress as his own readiness for higher levels of activity is indicated? Our desire, certainly, is to deal with each child individually, but how, also, to handle the ever-increasing body of subject matter that each child should assimilate? The interplay of all these factors must somehow settle into a compatible balance if we are to further our goals. Many educators have espoused the nongraded school organization as the framework in which this balance can ultimately manifest itself.

The nongraded program is an attempt to maximize opportunities for each child to develop his capacities to the fullest. Not only is acceptance of individual differences basic to success but, additionally, the curriculum is tailored to the needs of the children. Generally, progress is based on a student's advancement through reading levels. Limited numbers of levels in each classroom eliminate the wide range usually found in a traditional classroom. Usually, there are overlapping levels between classes, and therefore the pupils can move up or down easily within their classroom. Transfers to other levels in other classrooms are easily made as well.

The history of nongraded schools is elusive. One must pick out various threads and try to weave them into meaningful patterns in order to satisfy the desire to know where and when it all started. A variety of nongraded programs exist, and these programs differ in many respects. Rather than think of nongrading as a positive historical movement one must think of it as a reactive one.

It seems that as early as the Quincy Grammar School set up its graded program in 1848, counteractive movements were established. In St. Louis around 1865, pupils were part of a grading plan that called for reclassification every six weeks, with the brighter ones being placed in advanced sections. Even in Quincy, the birthplace of the graded school, Superintendent Francis W. Parker introduced the counteractive coaching scheme to keep the less able pupils in step with the grade. The Batavia plan with two teachers per class was but another reactive movement to deal with the graded organization. Generally, perceptive educators frankly admitted to the impossibility of keeping everybody in step at the same level. Many resorted to a plan whereby the amount of material to be studied was varied for fast, average, or slow groups.

One could list many other schema to compensate for or "get around" the graded organization. For example, educators tried extra-help activities, differentiation of assigned materials, half-term promotions, and acceleration. But the grade basis remained. Pupil retention practices remained. Grade terminology, as it regarded progress, remained.

It was in the late 1930s in Milwaukee that nongrading as a modern cohesive concept of elementary organization took root. But as recent as about a decade ago, action toward setting up nongraded schools was rarely in evidence. During the late 1950s and now well into the 1960s nongrading has become an increasingly accelerated educational movement, evolving so that the very patterns of nongrading lead inescapably to various types of teacher collaboration. Nongrading has now become inextricably bound up with team approaches to learning. It should be noted that the ultimate in nongrading in which each child is a "total" learner has not been reached. If the nongraded movement is to have a secure place in the annals of American education, it must

serve innovation and change in an expansive, not circumscribed, approach.

The readings in this section will give clearer insight into the nongraded movement, which attempts to do all of the things that are done in a graded situation but without those negative features which may frequently characterize the graded program. The fact that all proponents of nongraded education indicate that nongrading is not a panacea for all of the current educational problems should be clearly kept in mind. As with any plan, clearly, advantages and disadvantages do exist. These arguments are noted.

The advantages claimed are that:

- There is continuous pupil progress, without predetermined barriers.

- Children compete with their own records rather than with each other.

- Children are happier without worry about promotion.

- Many children who are slow starters (who would flunk a regular first grade) subsequently make up for it and finish the primary unit in the regular three years.

- Certain slow-learning children frequently, if given enough time to cogitate and assimilate, may achieve much better.

- There are no gaps in instruction since no grades are skipped.

- There is no repetition of material a child already knows, since he begins a new year where he left off.

- The system is well adapted to lags and spurts, which psychology has shown are typical of growing children.

- The nongraded school encourages flexibility in grouping.

- Emotional needs of children may be satisfied to a greater extent in a nongraded program, thus promoting mental health.

- Discipline problems may be reduced, because of less boredom when children are working where their capabilities permit.

- Parents may have more rapport with the school due to the information program necessary during the implementation of nongrading.

- The nongraded program promotes more teamwork on the part of the faculty.

- Pressures to achieve end-of-term goals and to maintain standards are reduced or eliminated.

- There is increased teacher awareness of pupil individuality, since individual differences are at the very core of the teaching.

The disadvantages claimed are that:

- There is a grave danger that establishing nongrading without curriculum reform results in simply replacing levels for grades. The levels then become hurdles to jump, much as grades are at the present time.

- Since school curricula are currently organized around topics covered at certain grades and depend heavily on graded textbooks, basic changes must be made or the curricular pattern and school structure will be incompatible. There is a need to determine sequential learnings in all subjects and this will require a great deal of time and effort by the faculty.

- There is some difficulty in aligning graded with nongraded units or schools, for example, a primary unit with a graded intermediate program, or a nongraded elementary school with the graded junior high.

- ✓ Teachers and parents are conditioned to the graded structure and there is a strong tendency to continue "grade mindedness."

- Extensive records must be kept for each child.

- Teaching is more challenging and difficult (but probably more rewarding).

- Nongrading alone does not improve the student's achievement level in education; there must be significant differences in the teachers' instructional practices.

- Nongrading nearly always results in the need to plan new reporting practices to parents since the traditional marking systems are not consistent with the aims and methods of nongrading. The planning of such new methods naturally takes much time and work by the already heavily burdened faculty and so is somewhat of a disadvantage (the parent-teacher conferences that often result would be a distinct advantage in getting more information to parents, in improving teacher-parent rapport, and

in furnishing teachers with more information about the child's background and homelife).

Knowledge about the attendant problems of nonpromotion has been extant for many years. Worth's article replicates much of what has been done and his conclusions reiterate what now are classic findings. The third implication stated in his study is one that has led directionally toward nongrading as a basic educational movement. Hillson refers to this implication from a similar study and goes on to describe the present nongraded movement. The two articles by Anderson and Goodlad report on a survey of the perceptions of those who are working in and with nongraded programs throughout the nation. These articles offer a wealth of descriptive material concerning a whole host of items. It is through the work of Halliwell, Skapski, and Hillson *et al.* that empirical research exists and indicates the superiority of the nongraded program in certain aspects of school achievement. Eldred and Hillson assume, in their short article, that mental health is bettered by such an organization, and Goodlad offers a short but realistic peroration for nongrading.

Promotion or Nonpromotion?

Walter H. Worth

Promotion practices are still a controversial issue in many school systems (6, 7). The incidence of nonpromotion is apparently increasing (9) even though existing research evidence (7, 18) indicates that few benefits accrue to pupil achievement and social-personal development from nonpromotion. This disparity between theory and practice suggests the need to test the continuing applicability of earlier research findings. The present study (19) seeks to do this. It also aims at some measure of control over variables not considered in previous research. The findings may

be of assistance to school workers in understanding and eventually solving the promotion problem.

PROBLEM

This study¹ sought to determine the effect of promotion and nonpromotion on the school achievement and social-personal development of matched groups of third and fourth grade pupils ordinarily categorized as low-achievers in a large urban school system.

Decisions were made among the following three kinds of hypotheses with reference to those aspects of school achievement and social-personal development which were observed:

1) There is a difference between promoted and nonpromoted low-achievers, and this difference is in favor of promoted low-achievers.

2) There is a difference between promoted and nonpromoted low-achievers, and this difference is in favor of nonpromoted low-achievers.

3) There is no difference between promoted and nonpromoted low-achievers.

PROCEDURE

SUBJECTS

The subjects of the investigation were two groups of 66 children each matched with respect to sex, IQ, chronological age, total achievement (California), and located in similar schools. One group consisted of low-achievers who had been promoted to the fourth grade, the other was made up of low-achievers who were nonpromoted and repeated the third grade. Each group contained twenty girls and forty-six boys. This sort of sex ratio was a reflection of the higher nonpromotion rate among boys than girls in the population sampled. Table I shows the characteristics of the groups with regard to IQ, chronological age, and achievement.

¹ The writer wishes to acknowledge the advice and assistance of his doctoral advisor, Dr. J. Harlan Shores of the University of Illinois, in the conduct of this investigation.

TABLE I
Comparison of Promoted and Nonpromoted Groups
with Regard to IQ, Chronological Age, and Total Achievement

Characteristic	IQ	Chronological Age in Months	Total Achievement Grade Score
Mean for promoted group	94.53	108.71	3.79
Mean for nonpromoted group	94.68	107.89	3.91
Standard deviation for promoted group	12.24	6.77	.34
Standard deviation for nonpromoted group	12.17	6.47	.34
Correlation between the promoted and nonpromoted groups	+.99	+.70	+.52

EXPERIMENTAL CONDITIONS

During the experimental year the pupils were enrolled in eighty different classrooms in more than thirty schools. No attempt was made to influence the treatment accorded them by school workers. However, information was secured by means of a questionnaire completed by each pupil's teacher about selected environmental and instructional factors judged to be influential in determining school progress. A statistical analysis² of these data did not detect differences in teacher experience, training, or continuity; pupil attendance, health, home or family conditions; small-group and individual instruction; provision of supplementary learning materials in reading, arithmetic, and language; and special treatment (e.g., referral to auxiliary services) for the populations of which the two groups were samples. The nonpromoted were, however, enrolled in larger size classes. The teachers of the promoted, on the other hand, provided more supplementary learning materials in spelling, and made greater use of special incentives, rewards, and punishments. For a large number of pupils in both groups, there appeared to be few provisions made for adapting instruction to individual needs.

² This analysis is explained in the section entitled "Statistical Treatment."

MEASURES OF ACHIEVEMENT AND SOCIAL-PERSONAL DEVELOPMENT

The measures of achievement were gain scores in twelve areas derived from the California Achievement Test, Primary, and the Gates Advanced Primary Reading Tests administered prior to the promotional decision and at the end of the experimental year. Teacher ratings on the following seven personality traits: emotional control, creativeness, judgment, coöperation, dependability, courtesy, and work habits, as defined and used in the school system's reporting procedures; and choice by classmates on a sociometric test as desirable and undesirable work and play companions served as measures of social-personal development. An attempt was made to observe the effect of promotion and nonpromotion through a comparison of the groups on these data.

STATISTICAL TREATMENT

A three-decision procedure (3, 5), employing a *t* or sign test, was used to decide (1) in favor of the promoted group, (2) in favor of the nonpromoted group or, (3) in favor of the (null) hypothesis of no difference between the promoted and nonpromoted groups on each of the achievement, social-personal development, and experimental conditions variables observed. This procedure is equivalent to two one-sided tests being carried out simultaneously (2), thereby permitting the detection of directional differences in favor of either group, or a retention of the hypothesis of no difference.

The statistical tests were so constructed that the probability of deciding upon a difference in favor of the promoted group when the hypothesis of no difference is true was set at the conventional value of .05. The probability of deciding in favor of the nonpromoted group when the hypothesis of no difference is true was also set at .05. Thus the probability of falsely rejecting the hypothesis of no difference is .10.

FINDINGS

ACHIEVEMENT

In the twelve areas of achievement observed, as is shown in Table II, the decision was in favor of the promoted group with regard to gain in reading vocabulary, total reading, and arithmetic.

TABLE II

Comparison of Promoted and Nonpromoted Groups
with Regard to Gains in Twelve Achievement Areas as Measured by
the California and Gates Tests Expressed in Grade Scores

Achievement Area	Promoted Group		Nonpromoted group		Differ- ence	Ob- served value of t	‡ P value
	S.D.		S.D.				
	Mean Gain	of Gain	Mean Gain	of Gain			
CALIFORNIA							
Reading vocabulary	.78	.58	.51	.53	+ .27	+ 2.76	.004***
Reading comprehension	.69	.49	.55	.53	+ .14	+ 1.46	.07*
Total reading	.71	.40	.51	.37	+ .20	+ 2.80	.004***
Arithmetic reasoning	.71	.41	.72	.49	— .01	— .10	.46*
Arithmetic fundamentals	.82	.59	.55	.50	+ .27	+ 2.75	.004***
Total arithmetic	.74	.38	.63	.41	+ .11	+ 1.63	.054*
Mechanics of English	.23	.76	.23	.87	+ .00	+ .00	.50*
Spelling	.59	.52	.51	.40	+ .08	+ 1.01	.16*
Total language	.42	.44	.36	.47	+ .06	+ .76	.23*
Total achievement	.59	.45	.53	.30	+ .06	+ .92	.18*
GATES							
Paragraph reading	.54	.75	.76	.77	— .22	— 1.76	.04**
Word recognition	.55	.65	.67	.46	— .12	— .125	.11*

(Critical value of t with 65 degrees of freedom ± 1.67)

* Decision in favor of hypothesis of no difference.

** Decision in favor of nonpromoted group.

*** Decision in favor of promoted group.

‡ The P value is the probability, if the null hypothesis is true, of observing a value of t greater than or equal to (or less than or equal to) the observed value of t depending on the direction of the difference between the means. Its derivation is explained in Wallis and Robert (17).

tic fundamentals. In paragraph reading the decision favored the nonpromoted. The decision was in favor of the hypothesis of no difference in reading comprehension, word recognition, arithmetic reasoning, total arithmetic, mechanics of English, spelling, total language, and total achievement. In the eight achievement areas for which the hypothesis of no difference was not rejected, the majority of the differences in the sample means were in the direction of the promoted pupils. The gains in all twelve areas for the pupils of both groups were less than the ten-month gains normally expected of typical pupils on the standardized tests used.

SOCIAL-PERSONAL DEVELOPMENT

When the groups were compared on eleven aspects of social-personal development, as indicated in Table III, the decision was

in favor of the nonpromoted group with regard to desirability as a work companion, and dependability. The decision was in favor of the hypothesis of no difference in emotional control, creative-

TABLE III

Sign Test Comparison of Promoted and Nonpromoted Groups with Regard to Teachers' Ratings on Seven Personality Traits and Frequency of Choice by Classmates as Desirable and Undesirable Work and Play Companions

Trait or Choice	P < NP	P = NP	P > NP	N	Critical Value of x	Ob- served Value of x	‡ P Value
	—	0	+				
Emotional control	15	42	9	24	7	9	.15*
Creativeness	25	26	15	40	14	15	.08*
Judgment	13	39	14	27	8	13	.50*
Coöperation	22	27	17	39	13	17	.26*
Dependability	27	25	14	41	14	14	.03**
Courtesy	18	34	14	32	10	14	.30*
Work habits	22	29	15	37	13	15	.16*
Desirable work companion	38	8	20	58	22	20	.01**
Undesirable work companion	24	12	30	54	20	24	.25*
Desirable play companion	31	6	29	60	23	29	.45*
Undesirable play companion	39	6	21	60	23	29	.45*

* Decision in favor of hypothesis of no difference.

** Decision in favor of nonpromoted group.

‡ The P value is the probability, if the null hypothesis is true, of observing a value of x less than or equal to the observed value of x (1).

ness, judgment, coöperation, courtesy, work habits, undesirability as a work companion, desirability as a play companion, and undesirability as a play companion. On the nine aspects of social-personal development for which the hypothesis of no difference was not rejected, the bulk of the differences in the sample medians were in the direction of the nonpromoted pupils.

INFLUENCE OF OBSERVED DIFFERENCES IN EXPERIMENTAL CONDITIONS

It is possible that these findings may reflect, to some degree, the difference in class size noted earlier. However, research on

the effects of class size strongly suggests that class size in itself bears little relationship to pupils achievement, and is inconclusive concerning the effect of class size on social-personal development (4, 10, 11, 12, 13). It is also possible that differences in teachers' uses of incentives, rewards, or punishments may have played a part in influencing the results of the experiment. Psychological research has amply demonstrated the significance of incentives, rewards, and punishments for all aspects of learning (14, 15, 16). But the kinds of incentives, rewards, and punishments that the teachers reported using, such as progress charts, detentions, and special privileges may not have been as effective in changing behavior as those described in the psychological literature. If this were so, it would tend to limit the importance to be attached to this factor in interpreting the findings of this study. Gain in spelling did not appear to be greatly affected by the difference between the groups in the provision of supplementary spelling materials.

DISCUSSION

Normal school progress is commonly considered to be one grade each year. Nonpromotion is usually advocated only when it can be demonstrated to be in the best interest of the child concerned. An argument often used to justify nonpromotion is that it improves school achievement. The findings of this study, however, do not support the view that nonpromotion improves school achievement. Low-achieving pupils who are nonpromoted appear to make no greater, and often less, gain in achievement than they do when promoted.

A possible explanation for the apparent inability of low-achievers to profit academically from nonpromotion may lie in the fact that teachers in this investigation reported using few, if any, supplementary learning materials in an effort to adapt instruction to the individual needs of the pupils concerned. It might therefore be inferred that, in large measure, the nonpromoted pupils repeated the regular third-grade program, while the promoted pupils were exposed to the regular fourth-grade program. If this were the case, and assuming that the repetition of partially-learned material is less stimulating than the challenge

of new material, then the repetitive nature of the treatment accorded the nonpromoted pupils may account for these low-achievers not exhibiting greater gains in achievement. The lack of special provisions for the non-promoted suggests the need for teachers to individualize instruction at the point of error for pupils so classified, in an effort to overcome the boredom and wastefulness that may result from mere repetition of the regular program. Such individualization of instruction may well require the development and utilization of special curricula, methods, and materials. The fact that few teachers reported individualizing instruction for the subjects of this study also suggests that existing programs of teacher education, both of a pre-service and in-service nature, may not be as helpful in preparing teachers for this responsibility as they might be.

Another way to meet the instructional problem posed by the low-achievers could be to develop a form of school organization in which promotion and nonpromotion would not occur. Such a form of school organization would eliminate traditional grade level lines, and the curriculum rigidity that tends to result, and would substitute a flexible method of pupil classification permitting the continuous progress of pupils from one school term to the next. If this were done, and at the same time provisions made for individualized instruction, it might be possible to bring about greater gains in achievement for low-achievers than those observed in this experiment.

There was some inconsistency in the gain scores in reading. The promoted gained more than the nonpromoted on the California measures. The nonpromoted, on the other hand, gained more than the promoted on the Gates measures. The disparity of these results is difficult to explain. It could be that errors in measurement occurred, or that these tests do measure different aspects of reading ability. It also could be that the Gates tests more closely resemble in content and format the exercise materials commonly used in primary reading programs than do the California tests. If this is the case, then the higher gain scores made by the nonpromoted pupils in paragraph reading and word recognition may reflect, to some degree, the nonpromoted pupils' more recent and frequent practice with similar materials occasioned by their repetition of the third grade. Furthermore, it may

be that while tasks not challenging in level and at a low level of expectation lead to a low level of achievement, continued practice with these low-level tasks develops a high level of proficiency with them when proficiency is measured by amount accomplished correctly in a given period of time. If this is so, and assuming that repetition of the third grade reading program and the Gates tests both emphasize reading tasks which are at a relatively low level of challenge and expectation, it may afford another possible explanation for the higher gain scores of the nonpromoted pupils in paragraph reading and word recognition as measured by the Gates tests. Conversely, the greater gain of the promoted pupils in reading vocabulary, reading comprehension, and total reading, as measured by the California tests, may reflect the influence of practice with reading tasks at a relatively higher level of challenge and expectation. Regardless of the reason, the conflicting nature of the gain scores in reading points up the need for school workers to exercise special caution in generalizing about pupil achievement on the basis of performance on a single standardized test.

The findings of this study concerning the effect of promotion and nonpromotion on social-personal development seem to run counter to those reported in the bulk of previous research (7, 18) on this problem. Nonpromotion does not appear to have an adverse effect on the social-personal development of low-achievers. On the contrary, low-achievers who are nonpromoted tend to be rated as high or higher on personality traits, and be accorded the same, and sometimes better, sociometric status than those who are promoted. This suggests the possibility that the greater gain in achievement made by the promoted pupils may have been at the expense of their social-personal development.

Obviously, however, the promotion factor is not the only influence which was reflected in these results. It may be that as members of larger-size classes the nonpromoted pupils' general behavior was less often drawn to the attention of their teachers and classmates, thereby increasing the likelihood of somewhat favorable, or at least rather neutral reactions. It may also be that the nonpromoted pupils, though they experienced less gain in achievement than did the promoted pupils, were better able to match the academic performance of the other pupils in their

classes. If this were so, then this factor may also have led to more favorable reactions from their teachers and classmates. In addition, the extent to which the teachers of the nonpromoted pupils may have deliberately sought social acceptance for these pupils in an effort to aid them in accepting the fact of nonpromotion is not known. Likewise unknown, is the effect of the age differential between the nonpromoted pupils and their classmates. Moreover, since no measure of social-personal development was obtained prior to the promotional decision, it is not known what differences existed in this respect at the beginning of the experiment. It is conceivable, therefore, that the findings with regard to social-personal development were conditioned by earlier differences and thus do not accurately reflect the effect of the promotion factor. And, finally, the limitations of the measures or social-personal development which were employed also need to be recognized.

A further explanation for the disparity between the results of this investigation and those conducted earlier may be that the effect of the promotion factor on social-personal development varies with age or grade level. This fact, plus the likelihood of some contamination of the results of this experiment by other factors, serves to emphasize the need for further study of the effect of promotion and nonpromotion on social-personal development.

It is interesting to note that almost seventy per cent of the subjects of this investigation were boys. This was a reflection of the higher nonpromotion rate among boys than girls in the population from which the nonpromoted sample was drawn. While each pair of pupils studied was of the same sex, the larger proportion of boys in both groups raises the question, however, as to whether some sort of sex difference may still be mirrored in the results of this experiment. Moreover, the fact that more boys than girls tend to be nonpromoted, as has been shown in this and other studies (8), is in itself a matter which merits further consideration by those concerned with promotional decisions.

In total, this study may be viewed as one bit of evidence that challenges the whole structure of the present elementary school. The findings strongly suggest that, as long as the relatively rigid grade placement of both pupils and content persists, neither promotion nor nonpromotion will adequately meet the needs of the

low-achiever. It appears that, until school workers develop more flexible instructional and organizational policies and practices, the problems associated with promotion and nonpromotion will be slow to diminish, and the low-achiever, as well as many of his classmates, are unlikely to be provided with the educational program they require.

CONCLUSIONS

1) Continued reliance upon nonpromotion in itself to improve school achievement is unwarranted. Low-achieving pupils who are nonpromoted appear to make no greater, and often less, gain in achievement than they do when promoted. If the practice of nonpromotion is to continue it must be justified on grounds other than improved achievement.

2) Nonpromotion does not appear to have as adverse an effect on social-personal development as previous research might lead one to expect. The social-personal adjustment of low-achievers when they are nonpromoted appears to be as good, if not better, than it is when they are promoted. However, further research is needed to facilitate a more clear-cut interpretation of the differences in the social-personal development of promoted and nonpromoted pupils.

IMPLICATIONS

1) Existing promotion policies and practices need to be carefully re-examined with a view to clarifying the bases for promotional decisions, and reducing the incidence of nonpromotion for the purpose of improving achievement.

2) Attempts need to be made to ascertain why more boys than girls are nonpromoted so that administrative and curricular policies may be modified to account for this sex difference.

3) Experimentation needs to be undertaken to develop a type of school organization which will permit continuous pupil progress, thereby eliminating many of the problems associated with promotion and nonpromotion.

4) Attention needs to be given to the development of special curricula, methods, and materials designed to facilitate individualized instruction so that the educational needs of the low-

achievers may be more effectively met under conditions of promotion and nonpromotion, or in continuous-progress plans wherein promotional decisions are not required.

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16) P. M. Symonds, "What Education Has to Learn From Psychology: III. Punishment." *Teachers College Record*, 57, April, 1956, pp. 449-62.

17) W. A. Wallis, and H. V. Roberts, *Statistics: A New Approach*. Glencoe: The Free Press, 1956, p. 436.

18) H. W. Worth, "Promotion vs. Nonpromotion: I. The Earlier Research Evidence." *Alberta Journal of Educational Research*, 5, June, 1959, pp. 77-86.

19) W. H. Worth, "The Effect of Promotion and Nonpromotion on Pupil Achievement and Social-Personal Development in the Elementary School." Unpublished Doctoral dissertation, University of Illinois, 1959.

Nongraded Schools: Organizational Design for Elementary Education

Maurie Hillson

In recent years attempts have been made to organize our elementary schools in a better way. In the literature one finds material about gifted classrooms, special classrooms, enriched programs, team teaching, and various schemes for departmentalized

Written especially for this book.

instruction. These discussions elaborate on and scrutinize programs for dealing with the nation's young, and for the most part, center around the early years of the child in elementary school.

One school organizational scheme which is presently being used to advantage is that plan identified by the several names: ungraded primary unit, the nongraded primary, the primary school, the reading levels program, the continuous program according to reading levels, the primary block plan. These appellations are not exhaustive by any means. Others may, and probably do exist.

Whatever these plans may be called, and whatever variations of these kinds of plans exist throughout the nation, one thing seems clear; that is that teachers, administrators, and parents alike are alert to some of the shortcomings of the graded system of elementary education as we have known and practiced it for years. These people are, in many different school systems across this nation, seeking different ways to better educate our young through study, analysis, and subsequent programs which in many instances result in a reorganization of the graded elementary school.

The elementary school in America has kept pace in many ways with the accruing benefits of modern educational research. The continuing concern of educators today is to seek ways in which instructional procedures can be brought into line with the knowledge which has been gained through the study of child psychology and human development. There is concern for the gifted child, the slow learner, the "late bloomer." The strict, segmented, subject matter approaches to learning and teaching practiced in the elementary grades is fast disappearing or at least should be. It seems reasonable that in light of this continuing research, educators and parents alike should attempt to upgrade the educational experience of the child.

The studies of Goodlad on promotion and nonpromotion give a clear indication of the dilemma which faces the teacher, administrator, and parent at the end of each school year. It is research such as this which shows that "undesirable growth characteristics and unsatisfactory school progress are more closely associated with nonpromoted children than with promoted slow-

learning children."¹ This underscores the need on the part of educators for a searching and honest re-evaluation of the organizational scheme of things.

Helen Heffernan's material in relation to grade standards points out that "Grade standards originated as an administrative device and not as an answer to the question, What is best for the child?"² She poses the question: "Can we justify the continuance of rigid grade standards as a basis for classifying pupils?"³ Her answer follows: "Fixed grade standards are untenable in the light of what is now known about the best ways to meet the needs of children. A plan for continuous growth is widely recognized as more desirable than the experience of annual evaluation followed by promotion and nonpromotion. Learning is continuous and must progress according to individual rate and ability. Schools cannot, therefore, justify the continuance of annual promotion or retardation as sound practice."⁴

The nongraded plan has been developed as a reorganizational program which attempts to deal with the problem of inflexibility in the education of a child: the approach to curriculum and the grouping of children for maximum learning; the knowledge that repeating a grade yields only at best a very slight, if any, advantage to the child; the desire to deal with the child as such as well as with the subject matter which he should assimilate; and the wholesome idea that a child should progress continuously as readiness for higher levels of activity is indicated. All of these factors find themselves in compatible balance in the organizational framework of the nongraded school.

As Goodlad pointed out in 1955: "Ungraded unit plans are too new and too few to be measured in conclusions that would satisfy scientific rigor."⁵ However, ten years hence, various reports

¹ John I. Goodlad, "Research and Theory Regarding Promotion and Nonpromotion," *The Elementary School Journal*, Vol. LIII, November 1952, p. 154. (See also: Worth, Walter H., "Promotion or Nonpromotion," *Educational Administration and Supervision*, Vol. 46, Jan. 1960, pp. 16-26).

² Helen Heffernan et al., "The Organization of the Elementary School and the Development of Personality," in William Fullagar and others, eds., *Readings for Educational Psychology*, New York, Thomas Y. Crowell, 1956, p. 357.

³ *Ibid.*, p. 357.

⁴ Heffernan et al., *op. cit.*, p. 357.

⁵ John I. Goodlad, "More About the Ungraded Unit Plan," *National Education Association Journal*, Vol. XLIV, May 1955, p. 296.

coming from the systems operating under these programs has helped in some ways to create a literature which is worth close perusal and study on the part of all concerned in the vital area of providing better educational programs for children. Both descriptive and experimental studies have been completed which evaluate aspects of nongrading. Even though these plans are steadily growing in number, there has been no startling "band wagon" acceptance or change to the nongraded idea. This is to be expected since the research indicates that this plan calls for a change in thinking, and where this kind of change is involved, time is needed.

However, a goodly number of people are interested in nongrading. The requests made for material of the various school systems using these programs, and the form letter replies which seek the recipient's indulgence (because requests for material are so heavy) would bespeak of much more than a mild interest.

The author of this article has participated as an educational consultant in many schools which have become nongraded. An early experience was as a consultant in a workshop program dealing with the problems of providing for individual differences in Vestal, New York. This program involved the teaching staff and the administration in a searching study of how best to provide for individual differences. In a study such as this, an investigation of the research on the nongraded plan was essential. Through a year's study and research program the study group, numbering over forty people, collected the data on the various nongraded plans throughout the country as identified by Anderson and Goodlad.⁶

The study group set up a questionnaire and sent it to forty-three school systems throughout the country. The questionnaire (see Chart 1) was sent to those systems using some form of nongraded plan and to those systems which were identified as having at some time used the nongraded plan but had for some reason discontinued it.

⁶ Robert H. Anderson and John I. Goodlad, *Untitled Material*, Unpublished Manuscript, November 1957. (This manuscript was used by the author in a course on nongraded education. It was later published as *The Nongraded Elementary School*, John I. Goodlad and Robert H. Anderson, New York, Harcourt, Brace & World, Inc., 1959.)

Better than 74% of the questionnaires were returned. This is a high percentage. It would also seem to indicate that those involved in the ongoing creative adventures in educational betterment want to share their experiences with others who would join them. Not only did they respond to the questionnaires, they sent back materials of all kinds, from philosophical statements to report card forms, from advice on how to avoid pitfalls to evaluations of programs over the years, from clear and honest statements on successes to equally clear and honest statements on the shortcomings of their programs. Most clearly, however, the questionnaire points to one basic thought: The nongraded program for these respondents was superior for both child and teacher and increased the chances for better education. It became obvious that there were many varieties or patterns of nongraded plans. There was, however, a core of similitude.

In general, the nongraded primary program consists of a three year program of continuous progress based on reading levels. It is an administrative organizational design which eliminates the traditional grades as such and allows the child to move at his own speed through an increasingly difficult series of experiences while, at the same time, adhering to the best principles of child development. In this plan in which the conventional grade levels have been dropped as designators and without year end norms and subsequent nonpromotion the child progresses through a series of levels which in most instances require three years time.

The slow learners may take four years to accomplish this. The rapid-learning child may accomplish the three years in two. He can, in this instance, either move to the next unit or have his program enriched in depth because he has the competency and skill to delve more deeply into subject matter. Under this program any child who, for reasons of prolonged illness, is forced to miss some part of his schooling, upon re-entry starts where he was when forced to leave. The whole program of allowing rapid learners to advance steadily as they assimilate increasingly difficult material is fostered. There is no prescribed or pre-packaged top. The opportunity for enrichment is greater under this program.

Although the nongraded program is based on administrative

CHART 1

In addition to the below form which carried fifteen questions under Item I, sixteen under Item II, and eleven under Item III, two pages of open-ended questions were a part of the questionnaire. These pages dealt with questions on types of reports to parents, where the idea for the program came from, what is good or bad about the program, the method of how teachers were assigned to groups and what are some of the guidelines to follow in setting up the program; also an opportunity to comment on any item in the questionnaire or on anything which was not covered in the questionnaire.

Please check the following statements in the column at the right of the page which most closely describe the situation which prevailed in your program

	To a very great extent	To a great extent	To some extent	To little extent	Not at all	Does not apply (or) No evidence exists
I. As It Concerned Parents						
1) Parents were educated before this plan was initiated in the school.	—	—	—	—	—	—
11) Parents cooperated by participation in conferences concerning their children's work.	—	—	—	—	—	—
12) Parental conferences served the purposes for which they were set up.	—	—	—	—	—	—

II. As It Concerned the Teachers

4) Most of the teachers shared ideas and problems on the plan as it progressed.

16) Under this plan teaching is increased for dealing with individual differences.

III. As It Concerned the Children

3) Children were capable of making reasonably rapid adjustment to the program.

8) Problems existed at the end of the primary unit because of the different levels of achievement by the same pupil.

11) As far as you know emotional problems were less under this program.

reorganization, questions raised by both administrators and teachers about what at first glance seem to be marked departures from the teaching program they now operate, can be easily answered by a comparative perusal of some aspects of nongrading.

One such question is: Must the teacher stay with the group he starts out with in the first year of primary? The data collected show various kinds of activities in relation to this question. Most systems operating a nongraded program had the child go to a different teacher each year. In no system was it mandatory that the teacher stay with the group for two or three years. In some systems the teacher stayed with the group for three years. In those same systems, however, a combination of a different teacher and the same teacher for two or three years was the program in operation. In a survey completed in 1955, no clear majority held for the idea of staying with the group for three years.⁷ It is interesting to note, that of the six first year primaries now in operation in the system involved in this study, four of the teachers have expressed a desire to go on with their groups. The basis for this feeling seems clear, and is borne out by the research data collected from those groups where teachers stayed for the three year period with the same class. It was indicated that the time of "getting to know" your pupils and organizing for instruction are cut down by so much that the immediacy of concrete teaching comes earlier in the year. It should be understood however, that staying with the group for more than one year is not a necessary prerequisite to the success of the nongraded program. If the philosophical rejection of the grade barrier is fully embraced, the teacher, unhampered, carries on realistically, and not artificially, where the child left off in June and helps him continue his progress.

Questions which arise about the organization for instruction are rather easily answered. If one were to visit a school where the nongraded plan is in operation, the differences between it and what is in existence in many schools are not immediately perceptible. The classroom sizes are the same. This plan is based on the generally accepted classroom ratio of one teacher to twenty-five pupils. In communities where pupil population is growing

⁷ Eva May Slater, "The Primary Unit," Curriculum Bulletin No. 2. Storrs, Connecticut, University of Connecticut Press, 1955, pp. iv, 33.

rapidly the ratio of pupils to one teacher increases in the non-graded program as it does in a graded system. It has been shown however, that the flexibility of the grouping and the deployment of teachers involved in the nongraded plans eases some of the problems attendant to crowded classrooms. The nongraded plan is certainly no substitute for reasonable classroom ratios.

The nature of the nongraded organization takes clearer shape as a closer look is given. The rooms in the school no longer have etched on the doors the terms: grade one, grade two, or grade three. Instead, in some systems the word *primary* will be found on all doors which once led to grades one, two, or three. In other systems the name of the teacher will be found on these doors, and reference to "Miss Smith's group" is the only identification needed. In one system which recently achieved a full-blown nongraded program, the terms *primary one*, *primary two*, and *primary three* are used.

The close observer will notice that the classroom organization differs in some respects, however. A nongraded classroom which allows the child to progress comfortably to levels of achievement irrespective of the graded label on the material, by necessity has a greater range of material available to the child. The absence of the fear of trespassing on the next grade teacher's material is evident. Also, the close observer and listener will notice the absence of the terms promotion, trial promotion, and failure. The total classroom organization will, in many instances, reflect that which we already know to be worthwhile in the education of the child. In this nongraded organization, the opportunity to exploit to the fullest the methodological approaches which seek to fulfill the individual needs of the child is apparent. It will therefore be apparent that a child in his second year of primary who is just finishing a needed extended readiness program is in a realistic organization in which he has an opportunity for fulfilling his need. He is not part of an organization which presses him into a second-grade book because the label on the door reads second grade.

The trend in education for better methods of reporting progress to parents reaches fruition in a nongraded plan. For many years, attempts have been made to bring the reporting system into line with the human developmental aspects of learn-

ing. Hours have been spent in explanations to parents the reasons why the particular reading level of a child is important and that the grade level accomplishment at any given time in a reading program does not necessarily mean a lack of success on the part of the child. The classroom teacher has been caught in a press because reporting pupil progress and human developmental abilities have been superimposed upon an inflexible report card procedure. The research concerning reporting to parents finds in the nongraded plan a logical vehicle. The widespread use of the term "reading level" makes sense in a plan based on reading levels; one of the bases of the nongraded school. The number of levels varies from system to system as does the description of each level. In some systems stick figures are used to identify the reading level described in the box adjacent to the place for the figure. By taking the best of the present trends in reporting progress and using them with the necessary requirements of the nongraded program the following can be said to describe the reporting programs:

All of the sample copies of the report forms in the author's collection have the sections for growth in the areas of citizenship. They have areas for social and work habits, or sections pertaining to social and emotional growth. The use of the descriptive phrases is quite common to the reports used in nongraded systems. The absence of letter grades, numerical grades, and the term *grade level* is marked. The most noticeable agreement in reporting to parents is in the area of conferences. Many systems used a conference of some type. All the systems studied combined various methods of letter reports, conferences, level identification, letter, or numerical symbols in their reporting programs. The term *report card* as such seems to be retiring from the scene along with the term *grade*. Many systems use the term *progress report* and they are exactly that. This type of reporting is one in which the school identifies areas which need improvement or indicate satisfactory progress, requests a conference at a date specified, and has a reply section in which the parent indicates whether he will phone, keep the assigned appointment, or indicates an alternate date for an appointment because the suggested appointment date cannot be kept.

The Appleton Public Schools, Appleton, Wisconsin have

developed, used, and evaluated a program which includes the child as well as the teacher. This progress report which communicates through a succinct statement the social and emotional growth, physical growth and health growth, growth in knowledge and skills (language arts, number experiences, science, social studies, and the arts), is backed up by a letter to the parents elaborating on these items and has found a good deal of favor. An insert for parents to comment on, regarding the report, completes the two-way street upon which all forms of reporting must seek to travel. It is this kind of reporting which would seem to build toward a cooperative activity of bringing the parent and school together in an effort to plan the next step in the child's learning program as well as help to set up in outline fashion the action which is to be taken so that both the home and the school work together toward a common purpose. It seems that the non-graded school in its departure from the graded idea, also departs fruitfully in its reporting program. Reporting the child's progress in nongraded schools makes provision for a sound working relationship between the home and the school.

An overview of the nongraded school cannot help but bring into focus the essentially important point of any kind of educational endeavor: The child will have to profit from the program if it is worthy of adoption and continuance. The hypothesis is that in nongrading, sociologically sound reasoning is the basis for keeping chronologically aged persons working together; the mental age differences are taken care of by allowing the children to work at different academic levels. Nongrading as such is not a panacea for school systems. It is an organizational device which allows one to do all of the things which a graded system attempts to do, without the poor features which mitigate against psychologically sound learning processes. Specifically, the Vestal study and subsequent congeries of research indicate this to be the case.

The Vestal study was set up to gain specific information in three basis categories. It attempted to ascertain how these programs worked as it concerned parents, as it concerned the teachers, and as it concerned the children. These three parts consisted of questions which could be checked in one of six columns indicating the respondents' agreement (see Chart 1) thus: *to a*

very great extent; to a great extent; to some extent; to little extent; not at all; or, this statement does not apply or no evidence exists on the question. In addition, the respondent had the opportunity to check the kinds and types of reports to parents which were used and where the original plan for the nongraded program in this system came from.

Because the study was not merely an attempt to collect information, but rather an instrument designed to aid a workshop program in specifically carrying out some type of reorganization the question asked: "Would you aid us in forming an opinion as to putting an ungraded program into operation?" brought with it much written material on the questionnaire as well as much printed material concerning the experiences of the respondents. Respondents were also given the opportunity to answer "open-ended" questions about what is good about the plan and what is bad about the plan. They were also asked if their opinion was negative, was it based on experience with this kind of plan. They were asked too, if their opinion was positive, if they could give us some guidelines for avoiding pitfalls in setting up such a plan. They did this, and to a great degree.

Basically the responses to the questionnaire give clear indications that the children in a nongraded plan benefit in many ways. The study showed that the children in these programs were capable of making a reasonably rapid adjustment to this type of program to a very great extent. Most of the respondents indicated that emotional problems of children under a program of this nature were *less*. No respondent of this question indicated that this was not true at least to *some extent*.

That part of the questionnaire which dealt with the teachers as such was also set up to reveal the intensity of intellectual accomplishment which could be expected under this type of program in comparison to what is readily acceptable under a present graded system. It was indicated that increased time for dealing with individual differences resulted to a very great extent or to a great extent. It was also indicated that boredom resulted to little extent or not at all for children in these types of programs, and that problems of grouping were handled satisfactorily to a very great extent. The maintenance of pupil control (discipline) was satisfactory to a very great extent according to most re-

spondents. It was pleasant to note that coupled with this satisfactory situation concerning control, parents cooperated satisfactorily with the school as it concerned discipline or behavior problems to a very great extent or at least to a great extent. It could well be that parents' understanding of a better and more successful way of teaching their children brings about cooperation between home and school.

The questionnaire asked several questions about parental relationships. It is interesting to note that before the initiation of this plan in their systems, parents were educated about the plan to a very great extent or to a great extent. The least amount of parental education was said to be to some extent. Only one respondent said that the parents were educated to little extent. Parental support of the plan after its initiation was to a great or very great extent. Not only did parents support the plan, they understood the reading levels which are in essence, the key to the whole plan. Their understanding of the levels was said to be to a very great extent in most cases. All through this section, the evidence points to a high degree of cooperation on the part of parents. The most heartening evidence for the harassed educator is seen in the response to the statement: If an additional year was needed by some children to complete the prescribed work, parents cooperated with the school.

Now this means a fourth year in a three year program—not a retention of one year, but rather a slow-moving child needing four years to complete three years of work. If an additional year was needed by some children (a fourth year) it was indicated that parents cooperated to a great extent or to a very great extent. In fact, 82% cooperated with this intensity. If you add those who cooperated to some extent the percentage becomes 92%. Out of every hundred pupils who needed a fourth year only eight parents proved to be uncooperative—and then only to a little extent. Make a mental comparison of the situation which prevails in your present graded system as it concerns retention. This will show how striking these percentages are.

It would seem that from the results of this questionnaire, the many articles on the nongraded program, and the increasing experimental evidence indicating the value of nongrading, that study and consideration of the program is a must for those

interested in educational betterment. The respondents to this questionnaire indicated by written comment what is good about the plan. They said:

It is flexible. It allows for a better adaptation to individual differences because of the administrative framework for the adjustment of curriculum. It creates better reading habits among the immature and slow learner. It decreases the tension between pupils and teacher. Each child progresses at his own speed. Good students work up to capacity. The slow learner does not feel inferior. The possibility of more nearly dealing with the child in relation to his needs is enhanced. It allows for continuous growth of children without the stigma of repetition or lacks in the educational program if a child skips and it is easily adapted to normal learning patterns.

These statements could be carried on *ad infinitum*, but the examples above should suffice. In answer to what is bad about the plan, and this plan has shortcomings as does any plan, the following is a sample of what was elicited from the respondents:

Nothing is bad if we attend to all problems as they occur. We have used this system for ten years and have found it to be unobjectionable to parents and teachers. It is sometimes harder on the teacher who works with the immature group. Difficulty exists in getting the community to think in terms other than grades. It takes considerable parent orientation as well as teacher-in-service training. Teachers cannot think of themselves as teachers of a specific level in this program but must learn to think of themselves in a total program.

There were other problems stated which concern individual progress, finding qualified teachers, orientation of parents, and the like. But on the whole, the total picture is one which shows that the benefits of such a program as the nongraded one will bring some desired changes so that many youngsters will no longer be, in the words of Shakespeare: "The whining school-boy, with his satchel and shining morning face, creeping like a snail unwillingly to school."

The nongraded program is in the words of Goodlad: "a light in the darkness to those teachers who look upon arbitrary

grade standards, annual promotions and repeated failure regardless of effort as antithetical to a range of pupil expectations, continuous pupil progress, and success geared to realistic tasks. To these teachers, the operation of . . . primary unit plans provides some assurance that organization is in its rightful place—subservient to, rather than master of instruction.”⁸

The nongraded system is based on the theory that children learn best and teachers teach best when the frustrations of artificial and unrealistic barriers are absent. In this day of educational expense in the space age, we can little afford to maintain the traditional structure of an educational graded program and hope that it will serve as the “launching pad” for greater and better learning in a harassed and kaleidoscopically changing world.

Self-appraisal in Nongraded Schools: A Survey of Findings and Perceptions

Robert H. Anderson and John I. Goodlad

In 1960 we conducted a survey of practices in 89 communities in which there were reported to be about 550 nongraded schools. This paper presents the self-appraisal practices and the research findings reported by the 89 centers. A second paper will discuss the procedures used in these communities to introduce nongrading, the specific program changes effected, and the plans these communities have for the future.

The data gathered in this study are not necessarily objective or fully representative of what is happening in schools labeled *nongraded*. Many answers to the survey questions tell only what

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⁸ John I. Goodlad, *op. cit.*, p. 171.

the respondents perceive reality to be. Only one questionnaire was sent to each school system; consequently, the respondent was sometimes a member of the central administrative staff, sometimes an elementary-school principal. Not all respondents answered all questions. In the light of these circumstances, this cannot be a quantitative report. It is, rather, a commentary on the respondents' subjective assessments of the present strengths and weaknesses of the nongraded school (1).

PUPIL ACHIEVEMENT

In the first group of questions the respondents were asked whether they gathered systematic data on pupil achievement and whether studies of achievement in nongraded classes included comparisons with control groups of graded classes (and if so, the nature and significance of differences that were found). As a check on the significance of differences in achievement, respondents were asked: Are you confident that the control group was actually different from the nongraded group with respect to the ways that the teachers used in dealing with the children?

Responses indicate that the overwhelming majority of schools depend on typical standardized tests to measure pupil learning. A few reported the use of tests that accompany reading series, and a few reported the use of devices such as reading progress cards, records of books read, logs for individual children, and samples of work, to estimate the rate and the adequacy of growth. Some responses indicated that nongraded classes had led to more testing and more diagnosis of test results.

Whenever control groups had been used, they were usually in other graded schools in the same district. Some districts compared the rate and the nature of achievement gains with those made in previous years by graded classes, that is, before the adoption of nongrading. Several reported that data on control groups were gathered in neighboring districts. The majority, however, made no comparisons with control groups.

How much confidence did the respondents have that there actually were differences between the graded and the nongraded groups? To this question, most replied "no information." Several made interesting comments, however:

Little doubt that we have had fewer discipline problems. By removing the fear of failure we have definitely improved the mental health of our pupils.

The difference was not in the actual teaching, but in the way the children were dealt with. No pressure to achieve beyond their ability. No repeating of materials; an increase of teaching materials. [This community reported 25 per cent higher achievement in the nongraded schools.]

The enthusiasm for the newly developed philosophy and knowledge of new skills and techniques spread from teachers of the experimental group to teachers of the control group. These, in turn, subconsciously resorted to the use of the same teaching methods.

I am very eager to compare our achievement with that of a really graded group. If you know of a school that is traditional in philosophy, that maintains strict grade standards, and is willing to compare results, I should like to contact that school.

The last comment illuminates one of the difficulties in conducting fruitful inquiry into the effect of nongrading on pupil growth. Nongrading as a philosophy is probably congenial to the beliefs and the practices of most teachers, even though for various reasons they remain surrounded by the machinery of grade structure. It may be that a great many teachers attempt to individualize instruction and to soften the effects of grade organization in their work with children. This tendency makes it difficult to compare nominally nongraded situations with nominally graded situations, since the environments could in effect be quite similar. As the fourth respondent noted, we need data from classrooms that are literally graded or literally nongraded. In the present study, we would like to assume that the nominally nongraded schools have more characteristics of literal nongradedness than may be found in the control schools, but the extent to which so-called nongraded schools truly represent the desired situation remains open to question.

We are dealing for the most part with the perceptions of persons deeply involved in, and enthusiastic about, the nongraded movement. Having made these qualifications, let us turn to the achievement story as the respondents reported it.

Most of them acknowledged that their reports were incomplete, insufficient, or tentative. Whenever a summary statement was made on differences between the graded and the nongraded classes, the statements indicated differences that favored the non-

graded classes. Several studies reported subscores that favored the control groups in a given area or for a segment of the population, but each such study as a whole showed that the nongraded classes had the advantage. Whenever statistical data permitted statements on the significance of the differences, a significant difference was rarely reported that was not in favor of the nongraded groups.

PUPIL ADJUSTMENT

The second group of questions asked for objective and/or impressionistic data on the social, emotional, and personal adjustment of children in nongraded classes. The investigators were disappointed to learn that little objective information had been gathered. Few schools had collected scores on personality tests, for example. Whatever data were available, however, definitely favored the nongraded groups. Eighteen respondents indicated that they had gathered no data of any kind on pupil adjustment. Twenty-seven respondents reported impressions on pupil adjustment; and, as in the question on achievement, the tenor of these comments was overwhelmingly positive.

Several respondents reported that in graded as well as in nongraded classes pupil adjustment is related to the caliber of the teachers. One respondent wrote:

Subjective data suggest that children's attitudes towards school still stem more from response to teacher than to mechanical organization. We have always taken individual differences into account so there could be no gross change as from a traditional grade to some new kind of education.

Another respondent wrote:

I don't know any good teachers who are using the lock-step type of instruction where everyone in the same room is expected to do the same things at the same time and at the same rate; therefore comparisons are hard to make.

Six respondents reported that slow children profited emotionally by the removal of the stigma of non-promotion, and a dozen others reported this advantage indirectly. Several commented on the academic advantage to brighter children as well as to slower children. In the nongraded class, the brighter chil-

dren were "no longer bored because of a lack of challenging work."

Many respondents reported a reduction in disciplinary problems. One community reported that there was less vandalism in the nongraded buildings. Another noted a reduction in absences and truancy. Several referred to the more responsible and more mature behavior of pupils in nongraded classes.

Although the data are by no means sufficient to justify definite claims about improved pupil adjustment, the reports of the spokesmen suggest that the teachers of nongraded pupils believe that their pupils are happier than they would be in graded classrooms.

PUPIL PROGRESS

In the third set of questions we tried to learn whether fast learners, who might have "skipped" a grade in earlier times, or slow learners, who might have lost a year through "failure," were progressing through nongraded schools at the rate of speed most desirable for them.

The schools were asked, "What number or per cent of children now take an 'extra' year or more to complete [the program], by comparison with your graded school experience?"

The replies indicate wide variance in practice. Unfortunately the responses are hard to interpret since virtually no respondents commented on the relative achievement of the children by the time they reached the next stage of their school career.

Typical of many comments was this one:

Two per cent [require the extra year]. This is considerably less than when we retained children.

Another stated:

Some children who appear to need an extra year when they are six years old may, when they are seven, have shown that they can proceed at a faster rate. This kind of flexibility is almost impossible in a graded school.

Other statements on retention are also worth noting:

Two per cent (retentions) in nongraded, 10 per cent in graded classes in this district; 6 per cent (retentions) in one school, 10 per cent in two others.

In some neighborhoods, scarcely any children require four years in the primary; in other neighborhoods, 15 to 20 per cent may require four years.

One or two per cent ungraded (retentions), 7 to 8 per cent graded. In low socio-economic neighborhoods, perhaps 20 per cent took a fourth year.

More pupils now take an extra year to complete the primary unit . . . but there are practically no failures or retentions in the intermediate grades. Previously there were more retentions in Grade 4 than in any other grade. Now $16\frac{2}{3}$ per cent compared with $33\frac{1}{3}$ per cent under traditional set-up.

It is evident that situations vary a great deal from community to community, that school people have varying feelings and beliefs about pupil progress, and that the nongraded philosophy is not yet evident in the practices of some presumably nongraded programs.

Some respondents expressed viewpoints that are inconsistent with the philosophy of the nongraded school:

There has been no dramatic change, nor do we feel that there should be.

Because of good grouping and excellent teaching practically all our pupils need only the customary three years.

We have the feeling that each child is entitled to an equal number of years in the public school program. Except for a few cases, we do not feel that a child should have to take more or less than the normal number of years in the program.

One question dealt with the extent to which more able children proceed rapidly. The most striking fact about these responses was that relatively few communities have encouraged acceleration that results in placing a child in a class of older children. Seven of the respondents indicated that the fast learners remained with their agemates but were given "enrichment," and five stated that fast learners were allowed to move into more advanced classwork. One respondent, for example, wrote:

Relatively large portions of Primary Three children begin to work with fourth year materials during the third year of the program.

A question on the progress of "typical learners" yielded little information worthy of comment.

CLASSROOM ATMOSPHERE

Next we asked about the influence of nongraded organization on the atmosphere of the school. In short, we were interested in the implications of nongrading for the mental health of pupils and teachers. The question proved redundant, since most respondents had already provided information on classroom atmosphere in their responses to other questions.

Practically every comment of some fifteen respondents who attempted to answer this question was positive. One community reported:

Teachers of lower ability groups not completely happy with program. Too much pressure by some parents for tutoring.

At other points in the questionnaire two respondents referred to difficulties encountered with some parents when they first realized that the child is going to need an extra year to complete the nongraded primary unit. However, seven respondents stated or implied that the parents' attitude toward an extra year is better in the nongraded school than in the graded school.

IMPACT ON TEACHERS

The next question opened with this statement: "Adoption of nongraded organization presumably changes the ways in which teachers plan their work, operate their classroom, measure their effectiveness, and conceive their professional role. If any studies have been made of the way *your* program has affected *your* teachers in these respects, please report them here."

Perhaps this question is one that should have been asked of teachers rather than administrators. At any rate, several generalizations emerge from the opinions volunteered:

There is greater positive emotional involvement in teaching on the part of teachers who participate in development of a nongraded plan.

At first there is considerable apprehension and/or tension among some teachers, especially traditionally oriented teachers. This anxiety, most respondents seemed to feel, gives way to satisfaction within a short time. Teachers in nongraded classes engage in more planning and more co-operative study than they did in graded schools.

Nongraded teachers appear to feel more relaxed about their work.

One comment, not necessarily typical, is worth noting:

Perhaps the outstanding effect upon our teachers has been a growing realization of the need for close co-operation. This system lends itself well to team teaching and the teacher who cannot work well with her colleagues is definitely out of place.

JUNIOR HIGH SCHOOL

The influence of the nongraded program on the junior-high program was the next topic in the questionnaire.

Six respondents reported that the children are further along when they reach junior high school, that junior high school teachers note that children from nongraded classes are better behaved or that they pose fewer attendance problems. Two respondents indicated that their nongraded program extends to Grade 9. Eight respondents reported that the junior high school staff has in effect begun to use the nongraded approach, and four reported that the junior high teachers have shown a real interest in the new philosophy. One respondent felt that the nongraded school enjoys great respect among the secondary-school teachers. Two reported that the advanced standing of pupils from nongraded classes was a source of annoyance or worry to the secondary-school teachers.

On the whole, the influence appears to have been extremely positive, both in stimulating appropriate procedures in junior high school and in building a bridge between the two groups of teachers.

IMPACT ON CURRICULUM DEVELOPMENT

Since the adoption of nongraded classes, has there been any notable increase in the amount and the effectiveness of staff activity in fundamental curriculum revision?

By a ratio of about 8 to 1, the answer to this question was affirmative. Three of the five who answered "no" went on to explain that an active in-service program has always been characteristic of that community. Among the activities cited were: preparation of materials more suitable for slow and fast learners, for children of limited backgrounds, and for others; development of a new curriculum in the social studies; more individualized teaching in arithmetic and reading; decreased use of single-text adoptions; increased use of unit teaching; intensive effort to make enrichment experiences more appropriate; effort to organize subjects other than reading into "levels"; increased attention to grouping practices; and "deeper concentration on fundamentals."

Several reported that intensive in-service studies of curriculum and of child development had been conducted either before or concurrent with the introduction of the nongraded plan. One respondent indicated that the nongraded primary had caused the staff to look more critically at the kindergarten program, and two mentioned that intermediate teachers in graded classes had begun serious re-examination of their program in the light of the nongraded program in the primary grades in their schools. Several reported heightened concern for evaluation and a better approach to it.

The responses indicated that there is a qualitative as well as a quantitative difference in the nongraded schools, as far as curriculum effort is concerned. The initiative, the industry, and the enthusiasm of the teachers in the nongraded classes were noted in many responses.

One respondent put it this way: "The nongraded teachers seem to be more vulnerable to the newer things and do not resist change as much." Another noted that nongraded teachers in system-wide meetings are "confronted with many a raised eyebrow or sigh when other teachers become aware of the great flexibility . . . in our school."

One respondent summed up a feeling implied by many other reports:

Once teachers are acquainted with the nongraded program they like it. I think the reason faculties and schools have been so slow to accept the plan is that they realize it is *not* the easy way to teach.

PARENT ATTITUDES

Apparently nongraded programs have met with such a favorable reaction from parents that few schools have regarded it necessary to make formal studies of parent opinion. Six schools gathered questionnaire data, in two cases in connection with graduate theses. Returns indicated favorable feelings on the part of 83 per cent to 96 per cent of the parents. Most other communities have measured parent reaction through interviews (one reported a total of five hundred interviews without a single negative reaction); through study groups and PTA meetings; through comments on report cards and during parent-teacher conferences; and through comments volunteered to administrators and school board members.

The questionnaire probed for differences in the reactions of children who were academically talented, below average, or typical. The reaction of all three groups was very favorable. One community reported that parents whose children attended a nongraded primary school petitioned the board to remove grades in the next school (graded) to which the children are sent.

Comments about the parents of academically talented children generally included the word *enthusiastic*. One school, however, stated that its severest critic is a parent who feels that her son is academically talented. Another school reported that there is now less pressure from such parents for early entrance to kindergarten, since the nongraded program allows brighter children to learn at their own speed. Another respondent stated that "acceleration hysteria has been placated."

According to the questionnaires, the parents appreciated the reduction of unreasonable pressure on below-average children:

The stigma of failure has been removed and (such) children have been happier and made more rapid progress.

While three schools reported that parents were dissatisfied when a fourth year is required, most other comments on the fourth-year problem indicated that parents were grateful for the "smooth situation" and "this kind of setting" for their child.

As might be expected, there was relatively little comment about unusual benefits for typical or average children. Re-

sponses to a question on the parental reports of pupil attitudes toward school, enthusiasm for the nongraded program, and general school morale were favorable with only one exception. These responses applied to children of all ability ranges.

PROBLEMS

In the last question, respondents were asked to describe the most serious problems the parents posed. Twenty-six respondents reported that the parents posed no problems; if there was a problem, it boiled down to co-operating with parents and keeping them informed, especially new parents.

Many respondents said that problems disappeared once parents understood the plan and its purposes. In communities where some schools are nongraded and others are not, or where only the primary section is nongraded, it is reported that "parents can't understand why the graded [classes] are allowed to continue as such." A few schools saw the persistence of grade-level vocabulary in the community (and among some teachers) as a problem. Two reported problems in transition to fourth grade or seventh grade. The following comments are of particular interest:

[We must] convince those few who have children in the below-average class that the program is the best for their child.

[Some] parents are still more concerned with prestige than they are with educational advantages.

[We must get] parents to take pressure off their children to "pass."

One problem is the inability of some teachers to see the advantage of a nongraded program.

One problem is parents who will not accept their child as a slow learner.

The parent who knows he has a bright child who is achieving far above average wants recognition by a competitive marking system.

Parents are not our problem. They are ahead of our teachers.

The parent of a child who requires an extra year said:

I would still rather she should go on. I wouldn't want her to fail. Using the word *reclassified* doesn't seem to help.

These comments reveal something about the nature of the problems and their origins.

As we noted earlier, the schools now operating so-called nongraded programs engage in a variety of practices and hold to a variety of viewpoints that depart somewhat from a pure philosophy of nongrading. Yet on the whole a common spirit and ideal permeate their thinking, and they all appear to be carrying on their work with striking enthusiasm. The available data offer them much encouragement to believe that all parties concerned are in favor of what is happening.

RESEARCH AND EVALUATION

Inquiry into the progress and the merit of nongraded organization will be facilitated by an increase in descriptive reports and by careful attempts at self-appraisal.

Typically, the school systems that have nongraded programs have issued bulletins and handbooks which serve the dual purpose of informing parents and answering inquiries of educators.

Over the past two years the periodical literature has paid increasing attention to the nongraded school, and several professional associations or councils have conducted studies of nongrading. At least four doctoral studies and a greater number of master's theses or course papers on the subject are known to have been completed. Many colleges have sponsored courses or workshops on the nongraded school. There is also a growing tendency for guidance and mental-health people to engage in studies of nongrading.

One major difficulty of controlled research in this area is that clear-cut models of gradedness and nongradedness are not yet available. This problem is brought into sharp focus in a recent study by Robert F. Carbone (2). Seeking to find differences between the two types of school organization, Carbone revealed in effect that the curriculum and practices of instruction in the nongraded schools in his study were imperfectly related to the theoretical ideal of nongraded practice. In other words, many

teachers in the nominally nongraded schools were continuing to use "graded" practices and to pursue "graded" goals. Quite likely the reverse is true of many teachers in graded classes.

The research problem is further complicated by the limitations of traditional achievement tests, which are geared to the curriculum and the instructional practices of graded schools. It may well be that comparative studies using such instruments will show little advantage, perhaps even disadvantage as in the Carbone study; for the nongraded school. Hence, there is a great need for assessment procedures and instruments wholly compatible with the philosophy of nongraded schools.

NOTES

(1) For a detailed discussion of the movement itself, see Robert H. Anderson and John I. Goodlad, *The Nongraded Elementary School*, Tarrytown, New York: Harcourt, Brace and World, Inc., 1959.

(2) Robert F. Carbone, "Achievement, Mental Health, and Instruction in Graded and Nongraded Elementary Schools." Unpublished Ph.D. dissertation, Department of Education, University of Chicago, 1961.

Educational Practices in Nongraded Schools: A Survey of Perceptions

John I. Goodlad and Robert H. Anderson

In 1960 we conducted a survey of nongraded schools in eighty-nine communities reported to have one or more such schools in operation. Responses indicated that grade labels had been removed from between two or more grades in about 550 schools.

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We had made extensive preliminary inquiries to identify all communities in which partially or completely nongraded schools were known to exist. However, subsequent correspondence reveals that we missed a good many such communities in this survey. Furthermore, since 1960 several large cities and many smaller school districts have introduced nongraded plans. Consequently, it is virtually impossible to make a close estimate of the number of nongraded schools now in existence.

The first part of the 1960 survey sought to determine what research and self-evaluation activities were underway in the schools. The findings of this part of the study have already been reported (1). The second part of the survey sought information on reasons for introducing a nongraded plan, on changes effected in any part of the school program as part of the process of bringing the nongraded plan into existence, on changes in program that followed introduction of the nongraded plan, on current modifications in school practices related to nongrading, and on long-term plans for the future. A separate question sought to inquire more deeply into practices of reporting to parents. The findings on these sections of the study are reported here.

The questionnaires were sent to only one person in each school system. Almost invariably the respondent was an elementary-school principal or a member of the administrative staff—an assistant superintendent, a director of curriculum, or a supervisor. The reader should be aware of the fact, then, that what we are reporting here are largely the perceptions of supervisory and administrative school personnel. To what extent the practices reported to us actually prevail is another question. In view of this important fact, we seek to convey impressions and perceptions of possible trends. Data are qualified only when our intent is to suggest a trend.

WHY BEGIN A NONGRADED PLAN?

In the first question in this section of the survey, we sought information on why schools introduced a nongraded plan. Forty-five per cent of the respondents used language revealing that improved attention to the individual and to individual differences was one result they hoped for. In fact, about 25 per cent of all

respondents used the words "better provision for individual differences" or a similar phrase.

The second largest category of responses (about 35 per cent) could be interpreted as reactions against the lock step of grading. Respondents spoke of the importance of eliminating grade barriers, of providing uninterrupted progress for pupils, and of eliminating retardation and nonpromotion, concomitants of the graded system. Some mentioned the need for greater flexibility in pupil placement and grouping.

The remaining responses were not readily classifiable except for a cluster of about 12 per cent that implied the possibility of effecting curriculum change through reorganization of the school. This cluster of responses cannot be summarized in a single sentence; however, the actual wording of the responses is suggestive. One respondent said, "We are concerned with enriching children's curricular experiences." Another said that teachers in the school moving into nongrading hoped to give more attention to measuring the growth of the individual pupil, in addition to or in place of rating children comparatively.

This first question was not designed to elicit, and did not elicit, responses on the effect of strong top-level leadership, the desire to keep up with other school districts, or a drive to get on a band wagon. Such factors do enter into educational decision-making, however, and may have influenced the decisions to initiate nongraded schools.

INTRODUCING NONGRADING

The second question inquired into changes made in the school program in order to bring a nongraded plan into existence. A nongraded structure cannot be plan-less; there must be some way of classifying pupils as they progress upward through the school. However, we suspect that some so-called nongraded schools are brought forth without a new plan of vertical organization. As a consequence, what emerges is really a graded plan under a new name.

Again, we found a substantial clustering of responses. About half of the replies indicated that an attempt was made to organize the skill areas of the curriculum into levels. Half of these efforts

were in the field of reading, as one might expect, since many of the nongraded plans were primary (embracing the first three grades) and since reading accomplishment is recognized almost universally as of prime importance during these early years of schooling.

Frequently, respondents attached descriptive material showing the progression of levels. In the description sent by one school, twelve reading levels are defined for the first three years of schooling. A left-hand column defines the reading skills expected at each level. A right-hand column lists the appropriate reading material, most of it being the progression of textbooks in the reading series of a well-known publishing company. Another school system provided check lists to be used by teachers in determining whether the child had acquired certain skills in reading or certain concepts in arithmetic.

It was difficult to determine from the responses whether a genuine rethinking of curriculum scope and sequence had occurred or the main effort had been directed to stating more specifically what was to be learned at each step in the existing progression. Our evidence suggests that the latter predominated. The responses suggest, further, that the levels became a means for differentiating the rate of progress of a child while in a class and ultimately through the years of the unit itself. Frequently, too, the levels were used as a means of interclass grouping and, almost uniformly, as a basis for homogeneous grouping in reading within a single class.

The remaining responses defy generalization. Some schools attempted to define and use social maturity as a basis for upward progression. Several used a semester classification plan, simply moving children forward from semester to semester with no accompanying effort to speed up or slow down the total time spent in the nongraded unit. Some schools reported that teachers now had the choice of remaining with a group of children for more than one year, moving up with the group during two or more successive years. Two schools reported an effort to develop evaluation techniques that were related to the actual progression of the child rather than his comparative position with other children. Some of the other replies appeared to be only remotely related to any effort to revise school structure.

REFINEMENTS IN SCHOOL PRACTICES

The third and fourth questions were designed to find out what educational practices had been developed following implementation of nongraded structure and what further modifications were under way. Because the two sets of responses had so many duplicates, the composite results are reported here.

The responses cluster into general categories: grouping, curriculum, facilities and resources, evaluation, and reporting to parents. About 20 per cent of the respondents reported that textbooks had been redistributed to fit more nearly the needs of small groups of pupils. The fact that only four respondents reported an increase in supplementary books, materials, and resources arouses one's curiosity. One would have thought that any plan entered into in the hope of making "better provision for individual differences" would have resulted in a general clamor for supplementary materials.

On the subject of grouping, respondents reported the following: the use of reading levels as a basis for homogeneous grouping, the creation of a nongraded "open" room for orienting all new pupils before placement in a class group, the use of a wider range of criteria for considering pupil placement, the acceleration or deceleration of pupils at the upper and the lower ends of the achievement continuum.

Under "evaluation and reporting to parents," respondents told of increased emphasis on the preparation of cumulative records, restudy of test instruments, use of faculty study conferences on child development, renewed interest in how to communicate effectively with parents, more frequent evaluation of entire class groups, modification of report cards, and conferences among teachers on pupil placement.

Although only about 12 per cent of the respondents indicated that their school introduced nongrading to effect curriculum reorganization, more than 30 per cent responded either that curriculum reorganization was accompanying the existing nongraded plan or that nongrading had stimulated interest in and created a need for curriculum revision. The subjects most commonly mentioned as requiring restudy during the implementation stages were reading and arithmetic. The subjects most commonly men-

tioned for curriculum reorganization in later stages of nongrading were the social studies and science.

REPORTING TO PARENTS

Our previous experience with nongrading and our information about it suggested that techniques of reporting to parents soon become a central concern of any group of educators involved in nongraded structure. Consequently, we inserted a separate question on this item.

Nearly 50 per cent of the respondents replied that conferences with parents had been substituted for or added to the usual "report card" method of communicating with the home about children's progress. An additional 25 per cent indicated that nongrading had been accompanied by a modification of the existing report card. The balance reported either no change or minor modification in terminology.

Many respondents reported hesitancy in giving up the written report card. Some systems combined individual and group conferences with two written report cards each year. Others eliminated the report card except for a final written report in June.

Additional comments reported on the familiar problem of improving techniques for conferring with parents. Some teachers experienced discomfort in face-to-face reporting. Questions often raised by parents did not alleviate this uneasiness, especially if teachers were unable to present samples of pupils' work and other evidence of progress. Many respondents reported on the inadequacy of the written report card in communicating pupil progress. Others observed that conferences with parents had been as useful in explaining the philosophy of the nongraded plan as in indicating the progress of the individual child.

PLANS FOR THE FUTURE

Responses to the question on plans for the future were general in character. The only clustering of responses referred to the need for improved understanding, among teachers and parents alike, of the rationale for the program. Respondents reported

that teachers have difficulty in divesting themselves of the "graded" mantle and that parents sometimes ask to have children's progress translated into grade norms. In several school systems, in-service education programs are to be devoted to further exploration of the concept of nongrading itself. Other respondents reported plans for orienting new teachers to the scheme, for using supplementary materials for children at the upper and the lower ends of the ability continuum, for refining reporting practices, and for developing evaluation techniques to appraise a wider range of goals.

The need for materials geared to the range of pupil abilities and achievements was mentioned several times. This response suggests that there has been some pressure from teachers for better materials but that there is still dissatisfaction about what is available. Teachers' irritation with grade-level designations in textbook materials came to the surface.

The wording of some responses attests to the difficulty of eliminating graded connotations and expectations. One respondent wrote at length about the fact that teachers who had taught in the school at the third- or fifth-grade level before nongrading were still associated with these grades after the elimination of grade levels in practice. He pointed out that teachers should be prepared to teach children of varying ages and should move from group to group for their own good and for "destroying the concept of the graded teacher."

According to many of the concluding statements, movement toward and refinement of nongrading resulted in more and better attention to the individual. Respondents reported that teachers were finding it necessary to engage in detailed analysis of the individual to determine appropriate placement, to report specifically to parents, and to pass along adequate information to the next teacher. One principal summed up several observations with the following statement: "That the teacher be proficient in his ability to study and interpret the learner's behavior is inexorably demanded by the primary unit plan." Many respondents proposed that their school districts initiate in-service education programs to assist teachers in individual diagnosis, in collection and organization of data, and in techniques of reporting to parents.

IN CONCLUSION

These perceptions of nongraded plans in operation have encouraging as well as discouraging elements. Depending on one's perspective, one could use the data for a biting indictment or a flowery indorsement of nongraded schools. We have assembled elsewhere our arguments for choosing nongrading over grading as the preferred scheme of vertical school organization (2).

Responses to our survey suggest some misunderstanding about the nongraded concept itself. Rather frequently, we found some reference to preconceived patterns of homogeneous grouping as central to nongrading. In much of our correspondence, educators involved in nongraded plans begin their letters somewhat as follows: "I am principal of a nongraded school. In our plan we group children from class to class according to their achievement in . . ." From here on, correspondents elaborate the grouping system or the plan of horizontal organization, failing to realize that nongrading is a scheme of vertical school organization (3). Vertical school organization provides a structure for classifying and moving children upward from entry into school to departure from school. The alternatives are grading and nongrading and such semi-ungraded arrangements as multigrading. Horizontal school organization provides a system for grouping learners and assigning them to available teachers. The choices are many, and they are usually based on analyses of children's characteristics, subject matter, or teachers' abilities and preparation. Every school has a pattern of horizontal organization. The two dimensions should not be confused.

As a consequence of our studies and observations to date, we pose the hypothesis that a substantial proportion of the elementary schools that now claim to be nongraded have given little or no attention to the vertical aspects of school organization. Changes effected to date tend to be modifications more of horizontal than of vertical structure. Consequently, many so-called nongraded schools are nongraded in name only.

We are much encouraged by the concern the responses showed for individual differences and the individual child. But we are somewhat discouraged by two aspects of this concern.

First, a large number of schools and school districts entered into nongrading to make better provisions for individual differences; however, they expressed little initial concern for curriculum reorganization.

We have consistently contended that school organization by itself does little or nothing to improve instructional practice. Elimination of grades merely creates an opportunity to provide curriculum and instruction adapted to the needs of the individual. We have gone so far as to suggest that a school or a school district ought not to develop a nongraded plan unless the staff is prepared to move on into major curriculum and instructional reorganization (2:215).

Our second reservation has to do with the levels plan of providing for individual differences in schools labeled nongraded. Too often, the levels are defined according to narrow, subject-matter expectations. Children are grouped horizontally according to their levels of accomplishment. This scheme does indeed provide for differentiated progress for individuals, but it does not necessarily take cognizance of the many unique traits emerging in the individual and the school's responsibility for developing these traits.

On the other side of the coin, admittedly we need better descriptions of desirable progressions in the development of concepts, skills, and values if we are ever to move from comparative to more absolute estimates of pupil progress. In our judgment, levels, if used at all, should be part of the diagnostic proficiency of the teacher and should not be used as arbitrary hurdles comparable to the grade hurdles, which the levels presumably replace.

We are encouraged most by the frequent mention of actual curriculum revision or the expressed need for curriculum revision after the implementation of a nongraded plan. These responses, however, must be interpreted with care, because a nagging awareness of need for curriculum reform may have existed before the introduction of nongrading. Nonetheless, the data suggest otherwise, since the need for curriculum revision was reported more as a concomitant of nongrading than as an initial reason for it.

This finding supports our contention that nongrading is an

unshackling concept. It forces attention to arbitrariness in the placement of content, to the need for a wide range of instructional materials, and to limitations in testing programs. A non-graded view of the school, free from the graded lock step, appears to us to be compatible with a longitudinal view of the curriculum and the continuous progression of pupils.

We are well aware that attention to organizational problems alone sometimes serves as an escape mechanism for individuals who are unwilling or unable to examine fundamental issues of curriculum and instruction. But our experience suggests that search for an escape mechanism is almost always an accompaniment of any attempt at educational reform. Child-study programs, for example, often bog down in meandering discussions of arbitrary administrators, misunderstood teachers, and misunderstanding parents. Even direct attempts at curriculum reform frequently deteriorate into the production of dull handbooks that collect dust on teachers' shelves.

Taken as a whole, the responses suggested few common directions for curriculum reform. This is not surprising, since educators have been unable to map out substantial areas of agreement on curriculum matters. Perhaps there are no patterns of curriculum and instruction that should accompany nongrading. At any rate, proponents of nongraded schools have been chary in spelling out specific instructional changes to go along with organizational reform.

We see nongrading as part of a much larger conception of school function and practice. This conception embraces a longitudinal view of the curriculum wherein concepts, skills, and values are identified and developed over several years of schooling. At any given moment, there are several classrooms—not just one or two—from which to select in placing a child for vertical progression through the school. Individual diagnosis serves to select the most promising classroom environment for each child. In the schools we envision, materials are distributed so as to provide a range of materials approximating the range of individual differences within a class group. Evaluation procedures are designed to determine the extent to which all school goals are being attained.

Organizational reform is but a beginning; it is not an end

in itself. To move into a nongraded plan without simultaneously or subsequently giving attention to fundamental questions of school function, curriculum design, teaching, and evaluation is to court chaos or, at best, to create a school that is nongraded in name only.

NOTES

1) Robert H. Anderson and John I. Goodlad. "Self-Appraisal in Nongraded Schools: A Survey of Findings and Perceptions," *Elementary School Journal*, LXII (February, 1962), 261-69.

2) John I. Goodlad and Robert H. Anderson. *The Nongraded Elementary School*. New York: Harcourt, Brace and World, Inc., 1959.

3) See John I. Goodlad, "Individual Differences and Vertical Organization of the School," *Individualizing Instruction*, pp. 209-38. Sixty-first Yearbook of the National Society for the Study of Education, Part I. Prepared by the Yearbook Committee, Fred T. Tyler, chairman. Chicago: Distributed by the University of Chicago Press, 1962.

A Comparison of Pupil Achievement in Graded and Nongraded Primary Classrooms

Joseph W. Halliwell

It was the purpose of this study to determine whether there would be a significant gain in the achievement of primary grade pupils after a variation of the nongraded primary unit was adopted.

More specifically, the investigation sought to compare the achievement of 146 primary pupils who had been taught for

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approximately one year under a nongraded program in reading and spelling with the achievement of 149 primary pupils who had been taught solely within the framework of the graded class structure.

BACKGROUND

The past decade will stand out for educators as a period of marked ferment in education. Although most of the ferment has taken place at the secondary school level, the elementary schools have also been affected greatly. While several noteworthy experimental programs featuring the teaching of foreign languages, the utilizing of an individualized reading program and the adopting of new approaches to the teaching of mathematics in the elementary schools have been undertaken, little attention has really been devoted to curriculum reform. The activity in elementary education has generally been concerned with organizational changes which were primarily designed to group children for learning in a more efficient manner.

Of the many organizational innovations in the elementary schools, the most publicized and fastest spreading is the nongraded school. Although variations of this type of plan which had been tried in the past did not withstand the test of time (2), the nongraded program reemerged in the early 1940's and has made a strong threat to replace the traditional graded classroom within the last decade (6).

The nongraded elementary school or the more common nongraded primary unit represents an endeavor to facilitate through organization a plan for the continuous growth of the child in the early school years. The advocates of the nongraded program feel that their approach is diametrically opposed to the rigid structure of the graded self-contained classroom. They feel that the graded, self-contained classrooms inevitably lead to the application of Procrustean standards (7).

It is difficult to define the nongraded program because of the unusually large number of variations of the program. Essentially, this type of organizational framework permits the student to progress at his own rate in the academic areas. Frequently, the curriculum or courses of study are broken down into sequential

levels, and the child works with a group of children at his level. Thus, a second grade student may be working with a first grade reading group and a third grade arithmetic group. Sometimes, the curriculum, methods and materials are changed when a nongraded program is started, but more often no modifications other than rate are made after the advent of a nongraded program.

The champions of the nongraded organizational pattern have certain convictions concerning the graded, self-contained classroom, namely, that teachers, for fear of encroaching on the domain of the teacher in the next higher grade, or for lack of time, hesitate to teach advanced work to fast learners, that teachers in their enthusiasm for preparing everyone for the next grade frequently push slow learners too rapidly for efficient learning and produce anxiety and frustration on the part of the pupils (and teachers), that teachers have to create so many groups in order to provide for individual differences that a great deal of seatwork activity is necessary to keep the groups busy, thus, precluding the opportunity for immediate feedback and permitting reinforcement of incorrect responses, that although teachers are not too reluctant to provide materials on lower grade levels for slow learners, the wide range of ability in the typical classroom would involve several below grade-level groups, that in actual practice teachers do not group pupils in subjects other than reading with notable frequency.

The proponents of the graded, self-contained classroom have been critical of many aspects of the nongraded program. They frequently assert that in this plan level standards have been substituted for grade standards (16), that provisions for integrated learning are reduced (5), and that ability grouping has been resurrected (18). Once the nongraded plan of organization has been classified as a form of ability grouping, all of the arguments, research and emotion directed against ability grouping in the past are employed again.

In actual practice the differences between graded and nongraded patterns of school organization are not as great as many people believe. Several perceptive educators have been extremely critical of the operation of many nongraded programs because they have felt that curricular change has been overlooked and

that concentration has been devoted solely to organizational change (11, 17). Frazier has pointed out that all too frequently nongrading results in the modification of only one dimension, rate of learning (3). Although Goodlad concurs with Frazier's general appraisal, he does focus attention on the possibilities for curriculum revision within the framework of the nongraded organizational pattern (5). However, a perusal of the literature concerning the nongraded organizational pattern indicates that in actual practice the differences between the graded and nongraded patterns of school organization are primarily organizational and not curricular, and that little attention has been devoted to exploring the possibilities for curriculum revision within the scaffolding of the nongraded organizational pattern.

A second consideration concerning similarity in organizational pattern between graded and nongraded programs is frequently overlooked. An analysis of these two organizational patterns reveals that both approaches utilize ability grouping. The nongraded structure features interclass and intergrade ability grouping in a subject such as reading whereas the graded structure features intraclass ability grouping for reading work. In the nongraded program children may be doing classwork at a level several years above or below grade norms. In the graded program children may be doing classwork at a level several years below grade norms, but rarely are children permitted to work at a level several years above grade norms. Thus, this major difference, organization, is basically a difference in degree.

Another major difference between the two approaches is that in the nongraded program the pupil frequently has different teachers for reading, arithmetic and other subjects. It is, however, important to note that the graded, self-contained classroom is rarely self-contained. Many, if not most, self-contained classrooms have special teachers for music, art, physical education, speech, or remedial reading. There is also a trend toward special teachers in science and foreign languages. In many nongraded programs pupils remain with the same class for social studies, science, physical education, music, art and language arts with the exception of reading and spelling. Once again, this major difference is merely a difference in degree.

Most of the research and argument mustered to support

either of these approaches to elementary school organization assume the type of exaggerated dualisms that Dewey inveighed against so vehemently. Most, if not all, of the differences between these two approaches are of degree and are not of kind. In general, the most salient characteristics distinguishing the non-graded program from the graded program are that, within the framework of the nongraded pattern, there is less reluctance to increase the ceiling or lower the floor of instruction to whatever extent necessary to provide for individual differences, and to increase the number of teachers the pupil encounters for instructional purposes during the school day.

The research relative to the superiority of one of these approaches over the other is rather limited. Most of the proponents of the self-contained classroom cite the insignificant differences found between pupils taught in "homogeneous" and "heterogeneous" classes as illustrative of the lack of efficacy of the nongraded program (18). These partisans fail to take cognizance of the fact that most of the studies on ability grouping involved ability groups that rigidly adhered to graded notions. The high ability groups were usually not exposed to any advanced work. In such a group "horizontal development" or "enrichment" was the goal rather than vertical development or acceleration. In actual practice the bright groups frequently marked time or did busy work. The slow ability group was frequently taught by teachers with a zeal to lift pupils up to grade level. Rarely did such teachers begin instructions more than a year or two below grade level. Anxiety and frustration were two of the more common outcomes of such classes.

Goodlad has surveyed the literature on the nongraded pattern of organization up to 1960 (4). His conclusions are that there have been few valid studies conducted in this area and that the few studies done favor nongraded over graded patterns of organization (6). He raises the question as to whether negative reports have been withheld. McNemar's caution as to the probability of false rejections of null hypotheses because of journal editors' tendency to reject manuscripts which do not contain statistically significant results must also not be overlooked in this regard (12).

A number of recent studies by Provus (14), Morgan and

Stucker (13), Skapski (15), Ingram (9) and Hart (8) have found significant superiority for nongraded patterns over graded patterns of organization while Carbone (1) and Koontz (10) found significant superiority for the graded pattern of organization.

Provus studied the effects of nongrading in arithmetic on fourth, fifth and sixth grade students (14). Children were allowed to proceed through the arithmetic sequence at their own rate of progress. His study yielded data significantly favoring the nongraded approach. Provus found that the superior students profited most from nongrading. The attitude of children toward math in the nongraded plan was not significantly different from the attitude toward math in the graded plan, but the teachers preferred the nongraded approach.

Morgan and Stucker compared the reading achievement of matched groups of 180 fifth and 226 sixth grade pupils assigned to self-contained and ability grouped reading classes (13). At the end of one year the fifth grade classes grouped for reading on the basis of ability were superior in reading achievement to the self-contained classes at the .01 level of confidence. At the sixth grade level the ability groups were superior to the self-contained groups at the .05 level of confidence. The investigators felt that the advantages of this type of ability grouping for the bright pupil were obvious but they hypothesized that the advantage to the slow pupil was that he was permitted to function in a non-threatening group of children experiencing similar problems, and that maximum feedback was possible.

Skapski undertook an investigation to determine whether second and third grade pupils who were involved in a nongraded program in reading achieved better than did pupils in a graded program and whether in such a program achievement in reading was superior to achievement in other academic areas (15). She found that the pupils in the nongraded program were significantly superior in reading to a matched group of pupils in a graded program and that the reading achievement of the nongraded group was significantly superior to the arithmetic and spelling achievement.

Ingram investigated the effects of a nongraded primary cycle on the achievement of third grade pupils at the termination of the cycle (9). The investigator was quite explicit in pointing

out that the nongraded program was an administrative device for organizing learning and that the curriculum and methodology were not altered. The nongraded pupils were compared with former pupils in the school who had been taught under the graded organizational pattern and with other contemporary pupils in the same city who were completing the primary grades in schools featuring the graded structure. The pupils in the nongraded program were superior in achievement to the former and contemporary pupils in graded classrooms in paragraph meaning, word meaning, spelling and language at the .01 level of confidence.

Hart compared the arithmetic achievement of 50 third grade pupils who had been taught arithmetic in a nongraded program with the arithmetic achievement of 50 third grade pupils who had been taught arithmetic in a graded program (8). The groups were matched on the basis of sex, age, IQ and socioeconomic status. His findings indicated a significant superiority in arithmetic achievement for the nongraded pupils.

Carbone compared the achievement of 122 intermediate grade pupils who had been taught in a nongraded primary program with 122 intermediate grade pupils who had been taught in a graded primary program (1). The two groups were matched on the basis of sex and age, and the influence of mental ability was held constant by means of analysis of covariance. The pupils from the graded primary classrooms were found to be significantly superior in achievement in all areas, vocabulary, reading comprehension, language, work study skills and arithmetic to the pupils from the nongraded primary classrooms.

Koontz studied achievement as a function of grouping by comparing the achievement of fourth grade pupils enrolled in homogeneously and heterogeneously grouped classrooms (10). Strictly speaking, this is not a study of nongrading, but since the homogeneous groups were permitted to progress at their own rate, the study has been included in this review. Utilizing a level analysis of variance design the investigator found that the heterogeneously grouped pupils were significantly superior to the homogeneously grouped pupils in the areas of reading and arithmetic. The difference in language was not significant.

This brief review of the studies conducted in this area gives

some indication of the conflicting evidence. Goodlad has maintained that the apparent conflict may not be real and that it is possible investigators have simply compared pupils in two differently labeled "graded schools" (6). Furthermore, Goodlad asserts that Carbone's study is valuable in that in not finding significant superiority for the nongraded group it has demonstrated "what organization by itself cannot possibly achieve." Unfortunately, Goodlad has oversimplified the situation and has misinterpreted the significance of Carbone's findings. If one accepts the hypothesis that Carbone's nongraded groups may not have differed from graded groups other than in organization, it becomes rather obvious that the significant superiority of the graded pupils cannot be attributed to the curriculum or instructional practices, but must be attributed solely to organization, the very point that Goodlad had felt he had refuted. This notion would seem to be corroborated by Ingram's study in which the nongraded groups were found to be significantly superior to the graded groups despite explicit statements to the effect that the only change was in organization.

This summary of the research indicates that the problem of assessing the value of nongraded programs is quite complex and that much more research will be needed before such programs can be evaluated with any degree of validity.

The present study was undertaken in an endeavor to shed some further light, if possible on the area of nongrading. It is the purpose of the present study to determine whether a nongraded pattern of organization in reading and spelling in the primary grades results in improved academic achievement.

PROCEDURE

The general plan of the study was to compare the spring achievement test scores of first, second and third grade pupils in a school which had inaugurated a nongraded program the previous fall with the spring achievement test scores of the previous school year when the school was organized solely on the basis of the traditional graded structure. At the first grade level only reading was taught on a nongraded basis. At the second and third grade levels both reading and spelling were taught on a

nongraded basis. Thus, some second graders left their homeroom and went to a first grade classroom for reading instruction while other second graders went to third grade classrooms for reading instruction.

In both school years, 1959-1960 and 1960-1961, achievement tests were administered to the first grade pupils in June. The word knowledge and reading comprehension sections of the California Achievement Tests were administered to every first grade pupil. At the second and third grade levels the Metropolitan Achievement Tests containing sections on word knowledge, word discrimination, reading, spelling, language, arithmetic computation and arithmetic problem solving were administered during the second week of April in both school years. Although nongrading was only employed in the subject matter areas of reading and spelling, it was considered important to test the pupils in all the subject matter areas enumerated because frequently when new techniques are employed in certain areas more time is devoted to these areas to the neglect of other areas. At the first grade level the only scores available for the graded group were the word knowledge and reading comprehension scores of the California Achievement Test, so for purposes of comparison two subtests in the California were the only tests administered to the nongraded groups. The Lorge-Thorndike Intelligence Test (Nonverbal Battery) was administered to every pupil in the study. The IQ scores derived from this test were used as the measure of mental ability.

Only those primary grade pupils who had been in the nongraded program since its inception in September of 1960 were included in the nongraded sample. Any pupils who entered school after September 1960 or left before the achievement testing period in April 1961 were not included in the study. The resulting nongraded sample comprised 46 first grade pupils, 50 second grade pupils and 50 third grade pupils. The graded sample included all of the first, second and third grade pupils who were in the graded program from September, 1959, to the achievement testing period in April, 1960. The resulting graded sample comprised 52 first grade pupils, 50 second grade pupils, and 47 third grade pupils.

When the nongraded program was inaugurated, no effort

was made to modify the curriculum or methodology. The non-graded pattern of organization was considered an administrative device for facilitating organization—and nothing more. Although the organizational structure was modified, the teachers, the basal reading series and the methodology were to be the same. However, as the term progressed more and more requests came to the office for more and different materials. The number of supplementary text requests increased markedly as did the number of requests for reading games, phonics workbooks, “easier spellers” and “harder spellers.” Furthermore, the teachers felt that their attitudes had changed. The teachers of the slower pupils felt that they had become more tolerant, were slowing down the rate at which new materials were presented and were presenting materials in more variegated ways. The teachers of the brighter pupils felt that in the past they had underestimated the extent of the brighter pupils’ abilities. Thus, while the original intent of the program was solely to modify the organizational pattern of the school, the program evolved into something more than just an organizational change. It therefore became evident that if any significant change in achievement were to be found, it could not be attributed to organization alone.

The approach to the statistical analysis of the data in the study was to be contingent upon a preliminary finding concerning the mental ability of the pupils in the graded and nongraded groups. If there were no significant differences between the mean intelligence scores of the graded and nongraded groups, the achievement differences between the two groups were to be tested by the simple *t* test technique. If there were significant differences in intelligence between the two groups, the achievement differences were to be tested by analysis of covariance.

FINDINGS

In the preliminary investigation the graded pupils in the first, second and third grades attained mean IQ scores of 104.93, 106.02 and 104.68, respectively. The nongraded pupils in the first, second and third grades attained mean IQ scores of 105.58, 104.81 and 103.43, respectively. When the mean differences in IQ between the graded and nongraded pupils were analyzed for

statistical significance, it was found that the differences did not approach significance at any of the grade levels. It was decided, therefore, to compare the achievement test scores of the two groups by means of the simple *t* test technique since the intelligence test scores were virtually constant.

The data relative to the achievement of the graded and nongraded groups at the first, second and third grade levels are presented in Table 1.

It is readily apparent from the data in Table 1 that the nongraded pupils in first grade obtained significantly higher achievement scores in word knowledge and reading comprehension on the California Achievement Test than did the graded pupils. Both of the differences were significant at the .01 level of confidence.

Analysis of the data at the second grade level indicates that, although the nongraded pupils attained higher achievement scores than the graded pupils in every subject area but word discrimination, only in the area of arithmetic was the difference significant. This difference favored the nongraded pupils at the .05 level of confidence.

The data yielded by Table 1 at the third grade level reveals that although the nongraded pupils attained higher mean achievement scores than did the graded pupils in every subject area tested, only three of these differences were statistically significant. The differences favoring the nongraded group in arithmetic computation and spelling were significant at the .01 level of confidence and the difference in arithmetic problem solving favored the nongraded group at the .05 level of confidence.

DISCUSSION

The findings at the first grade level reflected a clear-cut superiority for the nongraded pupils over the graded pupils in the two reading subtests. At the second and third grade levels five of the six mean subtest scores in reading favored the nongraded pupils but none of the differences were significant. At the second and third grade levels both mean scores in spelling favored the nongraded group, but only the third grade difference

TABLE 1
Achievement of 149 Graded and 146 Nongraded Pupils as Indicated
by Mean Grade Equivalents on the
California and Metropolitan Achievement Tests*

	Grade	Graded			Nongraded			t test	P
		N	Mean Achievement	Standard Deviation	N	Mean Achievement	Standard Deviation		
Word Knowledge	1	52	2.48	.74	46	3.57	.82	6.75	<.01
Reading Comprehension	1	52	2.08	.80	46	2.86	.84	4.59	<.01
Word Knowledge	2	50	3.11	1.01	50	3.31	1.05	.95	N.S.
Word Discrimination	2	50	3.20	1.20	50	3.11	1.24	.41	N.S.
Reading	2	50	3.10	1.00	50	3.39	1.13	.21	N.S.
Spelling	2	50	2.69	1.09	50	3.12	1.37	1.63	N.S.
Total Arithmetic	2	50	2.42	.85	50	2.82	.93	2.22	<.05
Word Knowledge	3	47	4.31	1.25	50	4.62	1.36	1.15	N.S.
Word Discrimination	3	47	3.96	1.52	50	4.37	1.59	1.29	N.S.
Reading	3	47	4.10	1.48	50	4.38	1.58	.90	N.S.
Spelling	3	47	4.13	1.31	50	5.12	1.49	3.54	<.01
Language	3	47	3.93	1.39	50	4.29	1.39	1.29	N.S.
Computation	3	47	3.64	.97	50	4.27	.66	3.71	<.01
Problem Solving	3	47	3.76	1.38	50	4.39	1.47	2.17	<.05

* California Achievement Test was used in first grade.

Metropolitan Achievement Test was used in second and third grade.

was statistically significant. At both the second and third grade levels the mean scores in arithmetic favored the nongraded group. At the second grade level the difference was significant at the .05 level of confidence and at the third grade level the difference in arithmetic computation was significant at the .01 level of confidence, while the difference in problem solving was significant at the .05 level of confidence. It is readily apparent that although the nongraded approach was only utilized in reading and spelling at the second and third grade levels, the gains in arithmetic were as great, if not greater, than those in reading and spelling.

A cursory examination of the findings in this study might cause one to question the efficacy of nongrading in reading and spelling at the second and third grade levels. However, discussions with the teachers in the experiment who had taught the students in both the graded and nongraded classes yielded information to the effect that the teachers spent a good deal less time teaching reading in the nongraded program, enabling them to devote more time to arithmetic, social studies and language arts instruction.

In interpreting the findings in the current study, two important considerations should not be overlooked. The first is that the nongraded program had only been in operation for eight months at the time of this investigation. The second is that although nongrading in this study had originally been inaugurated solely as an organizational change, concomitant changes in methods, materials and attitudes also occurred.

In the light of the findings of this investigation it would seem that a nongraded approach to the teaching of reading and spelling has proved quite effective and is worthy of further investigation.

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Ungraded Primary Reading Program: An Objective Evaluation

Mary K. Skapski

More and more elementary schools are replacing their first three grades with so-called ungraded primaries. In these units, groups of children who show about equal readiness for learning are allowed to progress through the primary work at rates appropriate to their ability.

In the ungraded primaries, learning is so paced that the child may experience success at every step of the way. Slow learners are not pushed into learning to read before they are ready, a practice sometimes followed in the hope that the children will be able to "pass" into second grade at the end of one year.

Gifted children spend as little time as possible on the extremely simple reading matter at the preprimer and primer levels and can be given a good deal of enrichment material. In short, the aim of the ungraded primary is to insure that provisions are made to meet individual differences.

Many descriptions of ungraded primaries can be found in educational literature (1). Although teachers and administrators who are working in ungraded primaries feel that the children benefit greatly from the programs (2), there have been few objective evaluations of the results of instruction in ungraded primaries. This study arose from an unusual opportunity to evaluate such a program.

For several years one public elementary school in Burlington, Vermont, has had an ungraded primary program in reading,

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while instruction in other subjects has been carried on under the traditional, graded system.

At the beginning of the study the writer administered the Stanford Achievement Test, Primary Battery, to all the second- and third-graders in this school; that is, to all children who were doing second- or third-grade work in subjects other than reading. The children's achievement in reading was then compared with their achievement in arithmetic.

There was some question as to which children should be chosen for the comparison. There were three possibilities: The achievement of all children of the same grade placement could be compared. Or the achievement of all children who had spent the same length of time in the primary unit could be compared. Or the achievement of only the modal-age children (those children who entered first grade in September of the calendar year in which they were born and spent one year in each grade) could be included.

As Table 1 shows, all three comparisons led to similar results. For reasons given in the detailed description of the study

TABLE 1

A Comparison of the Reading and Arithmetic Achievement of Children in a School with an Ungraded Primary Reading Program

Group	Number	Average Reading Achievement	Average Arithmetic Achievement	Difference
All second-grade children	38	3.2	2.4	0.8
All third-grade children	47	4.7	3.3	1.4
All children in their second year in the primary	36	3.4	2.5	.9
All children in their third year in the primary	39	4.7	3.2	1.5
Modal-age second-graders	34	3.2*	2.5†	.7
Modal-age third-graders	36	4.8‡	3.3§	1.5

* Standard deviation = 0.8.

† Standard deviation = 0.1.

‡ Standard deviation = 1.2.

§ Standard deviation = 0.4.

(3), the grade-equivalent scores on the Primary Paragraph Meaning Test were used as the measure of reading achievement, and the grade-equivalent scores on the Primary Arithmetic Computation Test were used as the measure of arithmetic achievement. The grade placement of the children at the time of testing was 2.5 (that is, fifth month of the second grade) for second-graders and 3.5 for third-graders.

The study emphasized the difference in achievement in two situations: first, when ample provisions were made for individual differences and, second, when virtually no such provisions were made. For this reason, it was decided to limit the comparison to the modal-age children, thus eliminating the children for whom provisions for individual differences were made in arithmetic through repeating or skipping a grade.

The Detroit Group Intelligence Test was administered to the children by the writer. The average intelligence quotient of the second- and third-graders in this school was 116. If the children were achieving in accordance with their ability, the average achievement should have been well above their grade placement. It can be seen from Table 1 that such was the case in reading, in which children of every ability level were presumably receiving instruction of an appropriate level of difficulty. In arithmetic, however, all children, regardless of ability, were being given instruction at the level of their grade placement. This procedure is reflected in the lower average arithmetic achievement of the children and also in the fact that the spread of the arithmetic scores (as indicated by the standard deviations) was much narrower than the spread of the reading scores.

Table 1 also shows that, in reading, the third-graders were achieving at a point further above their grade placement than the second-graders, who had spent one year less in the ungraded situation. This result is understandable, since (with one or two exceptions) all the children started at the same point at the beginning of the first year in the primary unit.

Guilford's formula for the standard error of a difference in correlated data was used to find whether the differences between reading and arithmetic achievement at each grade level were statistically significant (4). Both differences were found to be very

significant, the t ratio being 5.4 for the second-graders and 7.5 for the third-graders.

The difference between achievement in the two subjects might have been due at least in part to the fact that the learning of reading is very different from the learning of arithmetic. For this reason, a second comparison was made.

The writer administered the same tests to all the second- and third-graders in two other elementary schools in the same city. The average intelligence quotients, as measured by the Detroit Group Intelligence Test, of the children in these two schools were found to be 116 and 115, as compared to the average of 116 in the school first studied.

The socioeconomic backgrounds of the children, the training and experience of their teachers, and the amount of time devoted to reading instruction in the three schools also proved comparable.

The reading achievement of the children in these two schools was compared with the reading achievement of the children in the first school. Since there was grouping (on an ability basis) within each grade for instruction in reading in the two schools with traditional primaries, this second comparison did not contrast the results of giving individualized instruction with the results of giving identical learning experiences to all children regardless of ability, as the first comparison had done. Rather the second comparison was a comparison of the results of two methods of providing for individual differences. That the children in the ungraded primary reading program were achieving at a higher level than the children in the traditional primaries can be seen from Table 2. Since the different schools had different promotion policies, the achievement of all the children who were in their third year in school, regardless of their formal grade placement, was used in this comparison.

There was no statistically significant difference between the reading achievement of the children in School 2 and the reading achievement of the children in School 3. The reading achievement of the children in School 1 (the school with the ungraded reading program) was significantly higher than that of the children in the other two schools combined, at the 1 per cent level of confidence ($t = 2.8$).

That the ungraded reading program did not result in

TABLE 2
Average Reading, Spelling, and Arithmetic Achievement
of All Children in Their Third Year in Each of the Three Schools

Children in Their Third Year	Number	Average Achievement in		
		Reading	Spelling*	Arithmetic
School 1	38	4.7†	4.0	3.2
School 2	33	4.2†	3.8	3.1
School 3	39	3.9‡	3.6	2.9

* Some children in each school attained perfect scores on the spelling test; therefore, their actual average achievement was higher than the total average scores would indicate.

† Standard deviation = 1.2.

‡ Standard deviation = 1.1.

lowered achievement in areas other than reading can also be seen from Table 2.

On the average, the children were benefiting from the ungraded reading program. The question remained whether children of all ability levels were benefiting. To answer this question, the children were arbitrarily divided into three groups on the basis of intelligence quotients according to the Detroit Group Intelligence Test: average, with intelligence quotients ranging from 88 to 112; superior, with intelligence quotients ranging from 113 to 124; and very superior, with intelligence quotients of 125 or higher. Since the standard deviation of the distribution of Detroit intelligence quotients in the general population is 12.5, the "average" classification included all the children who were within one standard deviation of the mean; the "superior" classification included the children whose intelligence quotients fell between one and two standard deviations above the mean, and the "very superior" classification included the children whose intelligence quotients were more than two standard deviations above the mean. There were no children in the sample with intelligence quotients lower than 87.

Table 3 shows a comparison of the reading and arithmetic achievement of the children of each ability level in their third year in the ungraded primary reading program. It can be seen that children of each ability level were doing considerably better in reading than in arithmetic. The difference was greatest for the very superior children. In arithmetic, these children were achieving exactly at the point of their grade placement: that is, at the

TABLE 3

Average Reading and Arithmetic Achievement of
Children of Different Ability Levels
in the School with the Ungraded Primary Reading Program

Ability Level	Number	Average Reading Achievement	Average Arithmetic Achievement	Difference
Average	17	4.1	2.9	1.2
Superior	12	4.8	3.4	1.4
Very superior	9	5.8	3.5	2.3

point at which instruction was being given. The average and superior children were not achieving up to this level. In reading, in which appropriate instruction was being given to children of each level of ability, there were great differences between the average achievements of the children of different ability levels.

Table 4 shows the reading achievement of the children of each ability level in each of the three schools. Again it is evident that children of each level of ability were benefiting from the individualized instruction they were receiving in the ungraded primary reading program, and again the difference was greatest for the children of very superior intelligence.

It should be mentioned that at the other end of the intelligence scale, under the ungraded plan, less than half as many children spend four years in the primary as would if the question of promotion came up at the end of their first year of school.

The ungraded primary, then, benefits all the children. Gifted children are not allowed to underachieve, nor are slow learners frustrated by repeated failure. All children progress steadily from level to level, each child at his own rate.

TABLE 4

Average Reading Achievement of Children
of Different Ability Levels in Each School

Ability Level	Average Reading Achievement of Children in		
	School 1	School 2	School 3
Average	4.1	3.7	3.3
Superior	4.8	4.4	4.1
Very superior	5.8	4.6	4.9

NOTES

1) See, for example, Florence C. Kelly, "Doing Away with Grade Levels," *NEA Journal*, XXXVII (April, 1948), 222-23. Some standard textbooks of educational psychology (for example, J. B. Stroud, *Psychology in Education*, p. 269; and L. J. Cronbach, *Educational Psychology*, p. 225) also describe this method of organization of primary instruction.

2) See, for example, Florence C. Kelly, "Ungraded Primary Schools Make the Grade in Milwaukee," *NEA Journal*, XL (December, 1951), 645-46.

3) Mary K. Skapski, "Individualized Instruction in the Ungraded Primary School and Its Effect upon the Achievement of Second and Third Grade Children of Different Ability Levels." Unpublished Master's thesis, University of Vermont, October, 1956.

4) J. P. Guilford, *Fundamental Statistics in Psychology and Education*, New York: McGraw-Hill Book Co., 1950.

A Controlled Experiment Evaluating the Effects of a Non-Graded Organization on Pupil Achievement*

Maurie Hillson, J. Charles Jones, J. William Moore,
and Frank Van Devender

A recurrent criticism of the educational system of this country has been that many programs and procedures have been put into large scale operation in the schools on the basis of the subjective impressions or the evangelistic zeal of their proponents and, once instituted, have been continued, in some cases

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for many years, with little or no effort being made at systematic evaluation. Hilgard (4) and others (1) have pointed out the tendency of educators to force psychological principles, without regard to their relevancy, into educational theory, using psychological labels as justification or support for existing educational practices.

In recent years the public elementary schools have shown increasing interest in non-grading as a possible solution to many of the academic problems encountered in the primary grades. In addition to an interest in improving achievement, there has been an understandable concern over the effects of academic failure on young children, estimates of the failure rate under the present grades system running as high as 18 percent on a national basis. The non-graded system has been promoted, not as a change in instructional method, but as a *reorganization* of the primary levels of instruction whereby children may progress at a rate appropriate to their abilities and without the disorganizing effects of the threat of failure. Other specific advantages claimed for the non-graded system in addition to improved achievement and reduction of tensions and anxieties for both pupils and teachers have been: instruction can be adjusted to individual spurts and lags in development; children will compete with their own records rather than with each other; teachers need not fear encroaching on "materials for the next grade" or be required to bring all children up to the same levels of achievement without regard to the ability of some children to achieve these norms; and children, after absence from school, may resume at the point where they left off. Moreover, those who attest to the worth of non-grading, state that a unique outcome of this procedure is that achievement is increased at all levels of pupil ability.

A procedure which promises so many benefits, with few if any drawbacks, is worth careful evaluation. To date, such evaluation as exists is largely subjective, anecdotal, and at the level of demonstration rather than experimentation.

Typical are results reported for a non-graded program in the Elmira Heights, New York, elementary schools which indicate that it is not uncommon for 90 percent to 95 percent of the non-graded pupils to be reading at a fourth-grade level at the end of three years, this in contrast with the 60 percent

typical of the pupils in a conventional graded program (5). Similar results are reported for the Linda School District, Marysville, California by R. A. Anderson (6). Other non-graded programs make comparable claims. However, some critics question the reliability of such evidence. *The Third Edition of the Encyclopedia of Educational Research* notes that "non-grading is supported by some plausible sounding claims and theories rather than by research" (2). It could be suggested that the apparent success of non-graded programs might be attributable to a number of uncontrolled variables, e.g., selection of the most able teachers for the non-graded groups, establishing in-service training programs for teachers and administrators prior to and during the program, development of special materials for use in the program and improved parent orientation and interest. The possibility is thus raised that demonstrated gains may result from the operation of one or more of these variables rather than from the change from a graded to a non-graded organization. The purpose of this investigation was to assess in a controlled experimental situation, the effects of a non-graded program on the reading achievement of a group of elementary school pupils. This is a preliminary report covering the first one and one-half years of the experimental period; the complete experiment will extend over three years.

METHOD

SUBJECTS

All first-grade students entering the Washington Elementary School (2) for the academic year 1960-61 were randomly assigned to either experimental ($N = 26$) or control groups ($N = 26$). Subjects remained in their respective groups for the academic years 1960-61 and 1961-62 and continued into 1962-63. Subjects identified as a part of the experimental program included only those initially assigned to these groups. Transfers or new entries were randomly assigned to experimental or control groups but were not included in the evaluation. Reading readiness levels for all children in both experimental and control groups were determined during the first two weeks of the school year and three levels of reading ability were established for each group.

TEACHERS

All teachers, whether assigned to experimental or control groups, were selected for participation on the basis of their excellence in teaching. Selection was made by the administration and an attempt was made to match the teachers on the basis of their past effectiveness. They were then randomly assigned to experimental or control groups. All teachers, whether experimental or control, participated in workshops in preparation for the non-graded program; all received the assistance of a reading consultant in selecting materials, carrying on their programs, and the observation and assessment of pupils for placement in reading groups.

PROCEDURE

Non-grading for the experimental group proceeded on a year-by-year basis; children were permitted to move from reading level to reading level as their level of performance dictated, there being a total of nine possible reading levels through which a pupil might progress during a three-year period. By the third year non-grading for grades one through three will be completed and the designations of first, second or third grade eliminated.

Pupils in the control group were placed in one of three reading level groups within a conventional graded program and instruction was adapted to the ability levels of the groups. At the end of each school year the entire class, with the exception of those classified as failures, was promoted to the next grade and again subdivided into three reading level groups. No child was assigned to a reading group except those contained within his own grade level, e.g., no child was assigned to a second grade reading group who was not in his second year of school and only those second year children who had failed first grade were assigned to reading groups below the three contained within the second grade.

RESULTS

The effects of the non-graded organization on pupil achievement were evaluated at the end of the third semester of the

experimental period by use of three achievement tests. The first was the Lee Clark Reading Test, the second and third were the Paragraph Meaning and Word Meaning tests of the Primary Battery of the Standard Achievement Test.

The results of the comparisons of the mean grade placement using the t-test analysis (two-tailed test), for the experimental and control groups for the Lee Clark Reading Test, Word Meaning, and Paragraph Meaning tests are presented in Table 1.

TABLE 1

A Comparison of Mean Grade Placement on Reading, Word Meaning and Paragraph Meaning Achievement Tests

Test	Experimental Group N = 26	Control Group N = 26	t	p
Lee Clark Reading	3.19	2.81	2.71	.01
Word Meaning	3.33	2.86	3.13	.01
Paragraph Meaning	3.27	2.90	1.95	.06

It can be observed in Table 1 that the E group for grade placement was significantly higher than the control group on all three measures of achievement.

DISCUSSION

Since it was the primary purpose of this investigation to provide more reliable data covering the effects of the non-graded primary organization on reading achievement, any conclusions which are drawn must be evaluated in terms of the soundness of the design of the experiment as well as the statistical analysis of the data. From this point of view, an evaluation of the design indicates that in general the variables were sufficiently controlled so that data resulting from the experimental situation were reliable. The only portion of the design in which greater control seemed desirable and was not possible within the limits of this investigation was teacher variability. Although care was exercised in the matching and the random assignment of teachers, because of the small number ($N = 6$), it is possible that some systematic differences still existed.

Turning to the statistical analysis of the scores obtained by the students on the related measures of reading achievement, it was found that the non-graded pupils performed at a higher academic level on all three measures. Specifically, a comparison of mean grade levels for reading as measured by the Lee Clark Reading test was significantly (.01 level) in favor of the non-graded primary organization. Comparison results were obtained when mean grade levels for related measures of reading (word meaning and paragraph meaning tests) were compared statistically. As observed in Table 1, the mean grade level on the word meaning test was significantly greater for the non-graded group at the .01 level of significance, and the paragraph meaning was greater in the same direction at the .06 level. These results are in keeping with a number of previous research findings supporting the use of the non-graded primary organization (6).

Since confidence can be placed in the design of the study and the resulting empirical evidence is strongly in favor of the non-graded group, it can be inferred that the superior achievement in reading of pupils in the non-graded group in this experiment was attributable to the organizational structure rather than to either superior pupil ability and/or teaching methods.

CONCLUSIONS

Generally it can be concluded that pupils participating in a non-graded primary organization (all other things being equal) will achieve at a significantly higher level on measures of reading ability and related measures of reading than will pupils participating in a graded organization. Specifically, it may be stated that pupils of all levels of ability achieved at a higher level than pupils in a graded situation. Further, it is concluded that the increased achievement of the participants in the non-graded primary program is primarily related to organizational structure when methods of teaching are held constant.

SUMMARY

Ss ($N = 52$) were taught reading in one of two public school organizational structures (graded versus non-graded). At the end

of one and one-half years of the three-year experimental period, analyses of grade level achievement for three measures related to reading achievement favored the non-graded organization at a level which was statistically significant.

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AN ADDITIONAL NOTE ON "A CONTROLLED EXPERIMENT EVALUATING THE EFFECTS OF A NON-GRADED ORGANIZATION ON PUPIL ACHIEVEMENT"

As noted in this article, the total experiment on nongrading was to cover a three-year period. The experimental period has now been completed. An assessment of this experimental situation has been tentatively made but as yet not reported in the literature.

Mr. Frank M. Van Devender, Elementary Supervisor of the Shamokin Public Schools, has sent on to the editor some of the material. In general, the evaluation of the effects of the non-graded organization on pupil achievement in reading at the end of the three-year period as measured by standard reading tests indicates that those in the experimental group measure higher in paragraph meaning, word meaning, reading, and language.

More striking than these gains, however, is what seems to have happened to the experimental group vis à vis the "above or below median grade level performance" in the area of reading.

One claim of the nongraded school is that it increases above-grade-level performance on the part of readers and due to various factors attendant to readiness, decreases below-grade-level performance. In Shamokin just twice as many in the experimental group were above the median on a composite reading score. In the control group 20 percent more of the youngsters were below the median on a composite reading score. Mr. Van Devender reports that results of other questionnaires to teachers, parents, and pupils show a favorable acceptance of nongrading.

The Nongraded School and Mental Health

Donald M. Eldred and Maurie Hillson

Individual differences in children and the need for individualized instruction are among the most serious problems that face the classroom teacher. Children vary in their rate of physical, mental, and emotional growth, and in their rate of learning. Some children spurt and grow rapidly at times. Other children lag and grow slowly at times. Still other children develop slowly most of the time.

Illness and malnutrition often retard growth and learning.

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Children who have social and personality problems often learn more slowly than children who are well adjusted.

Many plans have been devised to provide for individual differences. However, the whole organizational structure of the school has been inimical to individual differences. The structure of the elementary school has been especially inappropriate, though the structure of the high school also merits criticism.

Many educators and psychologists believe that the failure to deal adequately with individual differences has led to reading problems, to academic retardation, to failure, and even to drop-outs, juvenile delinquency, and mental illness.

Increasing concern with these problems and with our failure to provide adequately for individual differences has led to critical study and analysis of the many plans for individualized instruction. One result has been a growing belief that we must create a non-graded plan. Under such a plan varying levels of instruction are set up to provide for the wide differences in children and their rates of learning.

The so-called graded system, some educators believe, has made it difficult to provide a learning situation in which each child is intrinsically motivated to work to his full capacity and is faced with problem-solving situations at his level of accomplishment.

Hence, much thought has been given to how we might provide a plan in which, ideally, each child would receive individualized instruction. If the ideal could not be achieved, at least our schools could be organized so that small groups of children are taught at a level appropriate to their ability, desire, intent, and learning skill.

During the past few years, programs of instruction that have abolished the graded organization and that go far toward the ideal of individualized instruction have increased at a phenomenal rate. The terms *non-graded school* or *levels program* are used in connection with these plans. In 1959, *The Nongraded Elementary School*, a book describing these programs, was published. This work by John I. Goodlad and Robert H. Anderson has become a landmark in this area of the reorganization of the elementary school (1). Since it appeared, many articles have been published describing the non-graded school and its advantages.

But little has been written about the potential mental health benefits of the non-graded school organization. The effects of failure, of non-promotion, and of negative interpersonal relationships between teacher and pupil have been a matter of concern for some time. Many attempts have been made to ameliorate these unfortunate aspects of our school system. But the basic system of school organization has remained, in many instances contributing its share to personality maladjustment, mental illness, juvenile delinquency, crime, and a host of similar problems.

This is not to say that the non-graded program will eliminate all these problems, but it seems reasonable to expect that this type of school organization could be far more effective than the organization of the past in producing healthy personalities and reducing problems.

Perhaps the best way to understand what the non-graded school can contribute to mental health is to consider some of the basic needs of all individuals, the essentials for adequate emotional nourishment, or ego nourishment, if you will.

We all need a sense of worth. It is one of our great needs. If a child or adult cannot achieve a sense of worth in wholesome ways that are accepted by society, he will use other ways. He may try to become outstanding by misbehavior, by chronic criticism, by gossip, by prejudice or intolerance. If the child lacks the courage to engage in these kinds of negative behavior, he may take the path of withdrawal and passivity. He may shrink from tackling problems because he feels certain that he will fail.

The pupil's sense of worth is not enhanced by failure to be promoted to the next grade, by repeating work that he has mastered, by meeting again tasks that he could not do satisfactorily the year before. Moreover, too often the child who is not promoted must work for two years or more with a teacher who is unable to find any way to help that child achieve a sense of worth.

The non-graded school does not require a child to repeat an entire grade. Instead, he is regrouped with other pupils who are at about his level of achievement and who are more likely to be about his age. This method of regrouping does much to avoid damaging blows to a child's sense of worth. Moreover, the

child will have a new teacher who may be able to find ways of developing the child's sense of worth, despite the fact that his previous teacher was unable to help him acquire a belief in himself.

There is still another way in which the non-graded school may help the child develop a sense of worth: by giving him an opportunity to catch up once he has achieved reading readiness or enough emotional maturity to permit normal progress. Or perhaps he has been absent from school a great deal because of illness or for some other reason. Under the traditional system too often such a child has to remain behind his classmates. As we have noted, failure to be promoted cannot but have an adverse effect on his sense of worth. In a non-graded school, once the child is ready he can move ahead and catch up, or nearly do so, and the result is a sense of achievement and worth.

These examples do not exhaust the ways in which the non-graded school can help children develop a more adequate sense of worth. Not the least of these is the opportunity the program offers the bright child to achieve in keeping with his ability and thus gain a greater sense of worth than if he were held back with children of lesser ability.

A second basic need common to all of us is the need to feel that we are succeeding in our daily tasks and that our success is recognized. Again, the non-graded school seems to offer much better opportunities for meeting this need than the traditional graded system. Under the graded system, a child may be promoted even though he, and everyone else, knows that he has not mastered certain fundamentals. As time goes on, he has increasing difficulty. Or he is failed and must repeat that which he knows as well as that which he does not know. Certainly, such a system offers little opportunity for success and recognition of success.

Moreover, the non-graded school provides the child an opportunity to have several teachers rather than one or two over a period of years. There is always the possibility that one teacher may succeed in finding the key to learning for a given child where others have failed. Hence, again, the non-graded school would seem to enhance the opportunities for success.

In addition, the non-graded school places the child with

children who are doing similar work, not with children who are ahead or behind. Once he catches on, he has the opportunity to progress rather than being held back by the traditional, graded system. The opportunity to progress when he is able to do so is especially important for the child who has been out of school for some time because of illness and who should not have to suffer the added blow of repeating the grade if he is capable of catching up and moving along as he masters the required units of work.

Thus, we see many ways in which the non-graded school provides opportunities for success and recognition of success.

It is also important for a child to feel accepted for what he is. Under the traditional graded system a child who spends a year or more in the same grade frequently comes to dislike the teacher. Often the teacher, regardless of her good intentions, may find it difficult to accept that child. Part of the child's dislike for his teacher and the situation in which he finds himself may be projected, or imagined, and the child may become all the more certain that he is not accepted by the teacher. Moreover, if the child finds himself, with just a few other children whom he knows, in a roomful of newcomers who are something of a social unit, he feels that he is an outsider rather than an insider, and his feelings often have a sound foundation in fact.

Furthermore, if a child is unable to do the work assigned by his teacher, he feels that he does not meet the requirements for belonging to the group. Moreover, his teacher often reacts in a manner that strongly suggests rejection. It would seem, then, that the slow learner in the graded system is likely to feel rejected rather than accepted.

In the non-graded school the situation is somewhat different. The slow learner is less likely to spend a year or more with the same teacher. He is not in a group made up preponderantly of newcomers who have arrived from another grade. Rather, he is in a group made up of a number of pupils whom he has known and worked with. He is not repeating what he already knows and made to feel stupid and inferior. Neither is he with children who surpass him; nor is he faced with work beyond his ability.

Instead, he is in a group of children who are neither below nor above him but who have problems and abilities similar to his. He can have the sense of belonging and the sense of worth

that come from being in a group of children of similar achievement. It would seem that in this setting the child will feel more accepted and have a greater sense of belonging than he would in the graded system.

Besides all this, in the non-graded school there is more regrouping of children from year to year with the result that pupils do not go on year after year with the same group. Rather, they find new friends and make new interpersonal relationships each year. Thus they feel increasingly sure of being accepted by new acquaintances, not just those whom they have known for years.

Finally, every child needs to feel loved. Not every teacher loves every child. In fact, it is doubtful that anyone can provide the love that a child needs to receive from his parents. But for a child to feel that someone is interested in him and that his happiness and contentment are of concern to someone is closely akin to love. Teachers can and often do provide this sort of affection.

It is easy to see how many more opportunities non-graded schools might provide for demonstrating this kind of warm interest. Indeed, the non-graded schools in themselves are an expression of interest in the individual child, his contentment and happiness. The flexibility of the non-graded school and the possibilities it offers for adapting the school program to the needs and abilities of the individual child are in themselves expressions of the kind of affection that every child needs and that the school and its teachers should provide.

As we have stated earlier, individual differences in children and the need for individualization of instruction are among the most serious problems facing the classroom teacher. Emotional malnutrition and the problems that arise from ego weakness are equally serious. We have tried to point out some of the ways in which the non-graded school organization not only provides for individualized instruction but also furnishes the emotional nourishment needed for mental health.

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What about Nongrading Our Schools?

John I. Goodlad

Nongrading isn't a panacea for all our educational ills. Moving from graded to nongraded structure makes life, in some ways, more difficult.

We talk a great deal about individual differences. But to recognize, accept, and try to do something educationally about even a small aspect of individual differences is to bring down upon our heads a host of compelling responsibilities. Facing up to these responsibilities is so demanding of time, energy, and creativity that it is easier to bury our heads in the sand, ostrichlike, hoping that individual differences, unnoticed, will just go away.

At first glance, nongrading appears to be merely another in a long line of organizational devices for classifying pupils and moving them through the school program at somewhat individualized rates of speed. This impression is both right and wrong. A nongraded school or unit is, indeed, one from which grade lines or barriers have been removed. A closer look, however, reveals nongrading to be an attempt to relate completely what we know about individual differences to conceptions of school function, curriculum, and vertical organization of the school.

INDIVIDUAL DIFFERENCES

The notion that all men are created equal has many appealing, humanistic connotations. But we now know that men are born with the most fundamental biochemical differences. These conspire with circumstances surrounding infancy and early childhood to produce five-year-olds entering kindergarten and six-year-olds entering the first grade who have little more than chronological age in common.

Analyses of achievement test data generally collected by teachers reveal a startling range of pupil accomplishments. In the usual fourth-grade class, for example:

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- The range in over-all average achievement is about four years, or about the same number as the grade-level designation. The range in reading is from six to eight years.

- Only 10 to 15 percent of the class (not 50 percent, as most commonly estimated by teachers) are at grade level in all subjects by midyear.

- Among the larger percentage of children presenting irregular patterns of achievement, there are some who vary from subject to subject by as much as four years.

(For a more comprehensive treatment of pupil realities confronting teachers in the classroom, see *The Nongraded Elementary School*, by John I. Goodlad and Robert H. Anderson, New York: Harcourt, Brace and Co., 1959).

To assume that such gross individuality can be accommodated adequately within conventional grade lines is to mislead teachers, parents, and even the children themselves. The attempt to do so obscures reality to the extent that teachers become "grade-minded" in their perceptions of what children are like and in what they seek to do for them instructionally.

SCHOOL FUNCTIONS

One view of what elementary schools are for—a view that is old, respected, and currently enjoying a renaissance—equates elementary education with a body of essential "stuff" to be learned. The learning tasks are quite arbitrarily placed, specifying what is to be learned when. The greater the learner readiness for these tasks, the fewer the learning (and, presumably, the teaching) problems. The learner "has an elementary education" when he completes what is laid out for mastery. It follows quite logically that the learner should be called upon to repeat if he fails to master the work laid out for any given grade. The fact that nonpromotion has failed to prove itself, that research is stacked against it, has nothing to do with the logic of the position itself.

Another view of elementary education envisions it as a period of time during which society provides formal means of supplementing (and sometimes offsetting) the work of the home in developing the potentialities of the young. The school is now called upon to identify what the learner is ready for and to pro-

vide learning opportunities accordingly. Since the learners are ready for very different things, the designation of set tasks for all is out of the question. New demands are placed upon curriculum planning. Nongrading squares with such a view.

CURRICULUM

Graded schools have led to graded content, graded textbooks, graded teachers, and graded views of children. Work laid out for each grade has acquired a certain sanctity. The "sacred cow" curriculum is the result.

Today knowledge is increasing and is being reorganized at a fantastic rate, but our curriculums seem to imply that knowledge packaged for school merchandising is inviolable. Schools would do their pupils a great service by impressing upon them that knowledge does and must change. Simultaneously, however, schools must keep children ever aware of the importance of facts in building fundamental understandings, even as the facts are being outdated.

Modern curriculum theory suggests that schools can stress both the changing nature of knowledge and the appropriate educational role of facts by identifying the major concepts, generalizations, and methods of inquiry to be developed over several years of schooling. Arbitrary, grade-level designations of content "to be covered" then become meaningless. A nongraded structure frees the teacher to choose from a wide range of alternatives in selecting content appropriate to both the attainment of long-term ends and the varied readiness levels of the learners in his charge.

IN CONCLUSION

For those who believe that differences in children are primarily differences in industry and application, that elementary schools exist to impose an arbitrary series of tasks, that the curriculum is a fixed body of lore, nongrading can scarcely be regarded as a panacea. But neither is it a panacea for those who believe that love is enough to induce children to learn, or that standards have no place in elementary education. And non-

grading certainly is no panacea for the lazy who would organize their problems out of existence.

To those who have chafed under the harness of grade requirements, who have striven nobly to provide for individual differences within their own classrooms, only to run afoul of school structure and nonpromotion dilemmas, nongrading appears as a light in the darkness. To follow the path the light reveals is not easy, but thousands of teachers in school systems of some thirty states are now treading the nongraded path and finding the experience most rewarding. Thousands more are at least taking a long, hard look along its length to see if it might lead them to more satisfying teaching.

Nongrading is an organizational device—but it is more than that, too. It is a way of viewing an elementary school program, and the variable, spurting, lagging, ever upward progress of the learners in it.

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THIS SHORT BIBLIOGRAPHY is an attempt to give the reader those supportive or adjunctive materials which space limitations precluded publishing. The reader will find here a mixture of articles, books, and references to some recently completed dissertations. The editor has been guided in his selection by two factors: one, the scope of the material within this text; and, two, extant material that is germane to the articles herein reprinted.

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